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(Original Official Organ U. S. Vet. Med. Ass'n.)

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ALL IN THE DAY'S WORK

During the course of the past few months we have received a great many letters. Such is to be expected in a position such as ours. Most of these letters have been pleasant to receive. They have contained an occasional complaint, something not very serious and easily adjusted, now and then a grievance, just as often imaginary as real, once in a while a letter that causes us to stop and seriously take an account of stock, and every now and then a message that causes a genuine smile to creep across our usually serious mien. Then a letter that we put away, to be read again the next day—and perhaps again the next, because we are not sure that we have correctly interpreted what the writer wished to convey. We want to let it digest.

From time to time we will take our readers into our confidence and show the contents of some of these letters. One of these is before us right now. The writer had evidently been taking an account of stock, just as we are wont to do, when occasion demands. Here are some of the things this man wrote:

"Keep after us practitioners and give us H— along general morals, technique, ethics, and so on, for in very truth it is by the practitioner that the profession is known.

"As veterinarians, we certainly appreciate our college pro-

fessors, with their superior knowledge. Many times we appeal to them for advice in treatment or help in diagnosis. Yet we sometimes criticise the JOURNAL and say that it is becoming a scientist's paper, and that it is no longer of much use to us. This is unfair, for without our college reports and such like, we would not even have a paper at all.

"The average practitioner is either too busy, or he may not have the facilities to test out and report on cases as he would like to do. Instead of covering pages with a report of some very interesting case, he can put it all down in a very small space, and then, if it does not look right or worth while, he just doesn't send it at all.

"Now if you can make everybody feel at home—'Just come right on in and sit down by the fire'—why I am sure that our family will grow."

To which we rise and remark: We want more letters of this kind, and more members like the man who wrote it.

WOMEN'S AUXILIARY OF THE A. V. M. A.

Though the convention in Montreal is still some months off, the railroads are sending out data as to rates and accommodations, so it behooves those of us who are planning to go, to start saving our pennies for that event.

To those of you who did not go to St. Louis last year, let us say that you missed a fine meeting and a good time. So we suggest that you start now to educate the Doctor into thinking that this would be a wonderful vacation trip.

If there are any ladies in your County or State who are not members, ask them to come to the convention. They may become members, however, without attending the convention, although we would like to see them there.

Besides the pleasure of becoming acquainted with the wives of veterinarians the country over, we have the privilege of aiding worthy young men to complete their veterinary education, by paying our dues, which are $1.00 per year. During the present college year we have loaned four hundred and fifty dollars, to such young men.

If you have not paid your dues, the Secretary, Mrs. F. A. Lambert, 1402 Fair Ave., Columbus, Ohio, will be pleased to receive them. Please *do it now*, along with your spring housecleaning.

D. I. L.

FARMER VACCINATION SPREADING

Michigan is now among the states threatened with farmer vaccination. A bill that is worded very closely after the Iowa law has been introduced in the Michigan legislature, and at the time this is written, has been reported out of the House Committee on Agriculture, in spite of strenuous efforts to have the bill die a natural death, through failure to be reported out. The House Committee on Agriculture granted a hearing to the proponents and opponents of the bill, on April 4, and for eight days nothing was heard of it. On the 12th it was reported out, after having been amended in two particulars, both favorable to opponents of the measure.

At the hearing on the bill, several points were brought out by both sides, which may be of interest. Arguing for the bill, one prominent farmer and swine-breeder stated in very emphatic terms that as a tax-payer he was entitled to all the education he could get, and that any further instructions or information he could obtain, on the subject of hog cholera and the use of serum and virus, was in the line of education, to which he was justly entitled. (He omitted to mention that the federal Bureau of Animal Industry has had a veterinarian stationed in his particular county, for a number of years, engaged in hog cholera control work.)

The second point that this proponent of the bill brought out was that the farmer has been driven to practice the strictest economy possible, and that if he could do his own vaccinating he could lower the cost of pork production. There was no suggestion that the veterinarians in his territory had been profiteering in their charges for vaccination, and we have information to the effect that the County Farm Bureau has been purchasing most of the serum used in this County, at 70 cents per hundred. The only saving that this man could effect would be the veterinarian's fee for service, and most farmers who have done any of their own vaccinating will confess that there is very little economy in the end, if any at all. Farmers have only been "kidding" themselves in this regard, too many times.

One of the disquieting features of the hearing, so far as we were concerned, was the reading of a letter, signed by an Iowa veterinarian, to the effect that farmer vaccination was proving to be highly satisfactory in his State. This particular letter had

a very profound influence on the members of the Agricultural Committee. In addition, we had to sit and listen to the usual array of short-comings of individual veterinarians. It was never more apparent that veterinarians must at all times, let alone just now, conduct themselves as professional men, and not give stock-owners just cause for complaint. So far as the vaccination of hogs is concerned, unless a veterinarian can go out and do a better, cleaner and more satisfactory job than his client can do himself, there is no particular object in the farmer employing the veterinarian to do the work.

Serum companies were accused of being in cahoots with the veterinarians, at least those who restricted the sale of their products to veterinarians only. We might say, in this connection, that there is a clause in the proposed bill providing that a veterinarian forfeit his license to practice, if he receives any profit or rebate on serum. (One of the advocates of the bill admitted that his Farm Bureau had to sell the serum at more than cost, in order to break even.) So far as the restrictions on the sale of certain brands of serum were concerned, it was our privilege to reply to this criticism. We endeavored to show that reputable companies are highly desirous of protecting the reputation of their products, and that they had found, through experience, that the safest way to do this was by placing their products in the hands of those best fitted, by education and training, to use such delicate products. The only practical way to do this was by restricting the sale to qualified veterinarians. (After the hearing was over, one farmer acknowledged that he had never thought of it in just that light.)

We will mention just one other incident. One veterinarian who attended the hearing, while on his way to the station to catch the train for Lansing, was met by one of his fellow-townsmen. On being asked the nature of his journey, the veterinarian explained the circumstances. His friend listened attentively, and when the veterinarian had finished, this was his friend's rejoinder: "I don't see what you 'vets' want to fight that bill for. Let the farmers have serum and virus. That will mean more hog cholera and then you fellows will have lots of more work to do."

EXECUTIVE BOARD ELECTIONS

The polls for nominations of candidates for members of the Executive Board, for Districts Nos. 2 and 3, closed on April 27th.

The five members nominated in District No. 2 are:

Dr. J. F. DeVine, of Goshen, N. Y.
Dr. Adolph Eichhorn, of Pearl River, N. Y.
Dr. Wm. Herbert Lowe, of Paterson, N. J.
Dr. Robert S. MacKellar, of New York, N. Y.
Dr. T. E. Munce, of Harrisburg, Pa.

Six names go on the election ballot in District No. 3, owing to a tie for fifth place. They are:

Dr. S. Brenton, of Detroit, Mich.
Dr. T. H. Ferguson, of Lake Geneva, Wis.
Dr. Reuben Hilty, of Toledo, Ohio
Dr. L. A. Merillat, of Chicago, Ill.
Dr. E. L. Quitman, of Chicago, Ill.
Dr. David S. White, of Columbus, Ohio.

It will not be necessary for us to tell who these eleven men are. Every one is well and favorably known to our entire membership, and needs no further introduction.

May the best pair win!

MOTOR TOURS TO MONTREAL

Montreal, within two days' easy motoring distance from New York, Boston and Buffalo, and connected by the King Edward Highway with the famous State roads of New York and northern New England, offers exceptional and indeed unique attractions for automobile tourists from the United States.

Montreal's key position, as the hub of a network of modern highways, makes it the logical rallying point for tourists who desire to make the most of a motor holiday in the Province of Quebec. From Quebec the new Levis-Jackman highway brings the touring motorist to the State roads system of Maine.

Montreal offers a wide variety of half-day or one-day motor trips. The circuit of the island is like a transcontinental tour in miniature, with its glimpses of the activities and industries of a modern city. A run of thirty miles take the visitor to the far-famed Oka Monastery of the Trappist monks. Another interesting short trip is Chambly, the birthplace of Madame Albani, the famous contralto, and where there may be visited a stone fort over two hundred years old.

OUR CODE OF ETHICS

Several veterinarians have recently raised the question as to how far a member of the Association might go, in advertising the fact that he was specializing in some particular branch of veterinary science, without violating our code of ethics.

The present code of ethics, as set forth in Article 19 of the By-laws, is very specific, and was so intended when originally written. It was desired to allow as little room for misinterpretation as possible, and when our opinion has been asked, we have invariably replied that a member should confine his "publicity campaign" to the publishing of his name, degree, address, office hours and telephone number.

Now comes the veterinarian who desires to announce to the public that he is specializing, perhaps in small animal practice, perhaps in the field of "bovine gynecology," perhaps in the diagnosis and treatment of lameness of horses. May he ethically direct attention to his specialty, and if so, how?

Times have changed and are changing, and it would appear that this question should be taken up and discussed now, just as well as later. It has been pointed out that members in our sister profession of medicine do not hesitate to "advertise" (we use the word with reservations), that they confine themselves to the practice of this, that or the other field of medicine or surgery, and without any apparent infraction of the code of ethics of human medicine.

Of course, if we relax, we must do so very cautiously. If some are given the proverbial inch, they will take the proverbial mile. But there is moderation in all things. We can not afford to be too straight-laced.

CANADIAN NATIONAL EXPOSITION AT TORONTO

Dr. J. A. Campbell, of Toronto, desires to call attention to the Canadian National Exhibition which is held annually in Toronto. This year the exhibition will run for two weeks, the last week in August and the first week in September. Dr. Campbell writes that it would be very much worth while for any of our members who are going to Montreal to plan to spend a couple of days at the exhibition, on their return trip. Members desiring further information in connection with this side trip will do well to communicate with Dr. Campbell, at 17 Elm St., Toronto.

HOW COME?

We wonder if we are away behind our British colleagues in the matter of veterinary education, or whether they have not yet heard of our stand on one phase of this subject. We refer to the correspondence school evil. We have not heard very much of veterinary correspondence schools lately, and had come to the conclusion that the business had ceased to be profitable.

Now comes a full-page advertisement, in the VETERINARY JOURNAL (London), of the Veterinary Correspondence College, offering "intensive and progressive postal tuition for all veterinary examinations for students and practitioners." The courses offered are for an array of degrees: M. R. C. V. S., B. Sc., B. V. Sc., D. V. H., F. R. C. V. S., M. V. Sc., and D. Sc. The fees are moderate and may be paid on the installment plan. Textbooks are loaned free.

Perhaps we have not quite caught the right idea in this new departure. We have hesitated to write for a prospectus, for fear our intentions might be misconstrued. Have any of our readers thought it desirable to supplement their veterinary education through a correspondence course?

HYGEIA

The first number of HYGEIA has appeared. Conceived, planned and finally launched by the American Medical Association, there is now available to the public a monthly journal, designed to promote a better understanding and to secure more sympathetic cooperation between the medical profession and the layman. HYGEIA is defined as "a journal of individual and community health," and is designed for the purpose of giving "plain facts about health and disease."

In the first number (April, 1923) we find articles on food poisoning (botulism), the causes of eyestrain and their prevention, cancer, the house fly as a carrier of disease, patent medicines, yellow fever, glands of internal secretion, military training camps, Louis Pasteur and his work, chromosomes, dental clinics and others. Surely variety enough for the most critical. If the first number is a fair sample of those to follow, HYGEIA should meet with a warm reception. Its function, being entirely educational, is a most worthy one. Veterinarians would do well to read it regularly.

1863-1898-1923

Our Association will be sixty years old this year. The United States Veterinary Medical Association was organized, in New York City, June 9, 1863. Thirty-five years later, in 1898, at the meeting in Omaha, the name of the organization was changed to the American Veterinary Medical Association. So, this year—1923—has a double significance. It marks the sixtieth anniversary of our birth, and a quarter of a century of our existence as the American Veterinary Medical Association.

MEMBERSHIP CAMPAIGN

Our campaign for new members is under way. We have planned a very intensive one this year, and with the publicity given the membership campaigns of last year and the year before, we hope that a very healthy increase in our numerical strength will be the result of the efforts which will be put forth during the next three months.

On another page will be found a complete list of President Welch's appointments as Resident Secretaries. These men have been selected with a great deal of care. They have accepted these appointments under promises to work. These men will work—there is no doubt of that. But we want every member to work, too.

Look around you, no matter where you are located, no matter what the branch of the profession in which you are engaged, and you will no doubt discover some veterinarian who would make a good member of our Association. Send in his name, with your recommendation, to your State Secretary. He will do the rest.

We are in a better position than ever before to assist our Resident Secretaries to get new members. We have installed multigraphing equipment in the Association offices, and we are prepared to get out a circular letter to prospects, in any state or province, at very short notice. We will prepare the letters, address and stamp the envelopes, so that all the Resident Secretary will have to do will be to sign the letters and place them in the mail.

During our travels of the past few months (we have been in fourteen states) we have met several veterinarians who have never had an invitation to join the Association. Others have

written in and asked how they could join. We did not lose any time telling them, you may rest assured.

Did it ever occur to you how easy it would be to double our membership? All that would be necessary would be for every present member to get one new member. Will you get yours?

COMMITTEE APPOINTMENTS

All members of the Association who have been appointed on committees, by President Welch, were so notified by the Secretary some time ago. As a timely reminder of these committee assignments, we are publishing in this issue of the JOURNAL a complete list of these committees, with the names and addresses of the chairmen and members. Turn to the list and see whether you are on a committee, if you do not wish to trust your memory. Some of these committees should now be hard at work. Others should be planning for their work that will come later, as the time of the Montreal meeting approaches.

Do not let your committee work go until the last minute. Reports gotten together in a hurry, and in the confusion which exists at the convention, are never as satisfactory as those which have received more calm and careful consideration. Get in touch with the chairman of your committee at once, unless you have already done so. And do not forget that the Secretary-Editor stands ready to assist your committee whenever and wherever possible. Make use of him now. He will be pretty busy later on.

LAPEL EMBLEMS

The lapel emblem officially adopted by the American Veterinarian Medical Association at the St. Louis convention is now available to our members. Those who have seen the emblem have appeared to be highly pleased with it. The Executive Board, at the meeting in December, directed the Secretary to procure five hundred of these emblems, and to sell them to members at fifty cents each. See page 17 of the advertising section for directions for ordering. Get yours before you go to Montreal!

COMING VETERINARY MEETINGS

Massachusetts Veterinary Association. Young's Hotel, Boston, Mass. May 23, 1923. Dr. C. H. Playdon, Secretary, Reading, Mass.

North Central Iowa Veterinary Medical Association. Fort Dodge, Iowa. May 29, 1923. Dr. H. J. Shore, Secretary, Fort Dodge, Iowa.

Colorado Veterinary Medical Association. Fort Collins, Colo., May 31, June 1, 2, 1923. Dr. I. E. Newsom, Secretary, Fort Collins, Colo.

New York City, Veterinary Medical Association of. Academy of Medicine, 17 W. 43rd St., New York, N. Y. June 6, 1923. Dr. C. G. Rohrer, Secretary, 40 W. 61st St., New York, N. Y.

California State Veterinary Medical Association. San Francisco, Cal. June 21, 22, 23, 1923. Dr. J. P. Bushong, Secretary, 908 Lindsay St., Los Angeles, Cal.

Michigan State Veterinary Medical Association. East Lansing, Mich. June 26, 27, 28, 1923. Dr. R. A. Runnells, Secretary, East Lansing, Mich.

North Carolina State Veterinary Medical Association. Statesville, N. C. June 27, 28, 1923. Dr. J. P. Spoon, Secretary, Burlington, N. C.

STATE BOARD EXAMINATIONS

California State Board of Examiners. San Francisco, Cal. June 20, 1923. Dr. John L. Tyler, Secretary, 120 E. Belgrave Ave., Huntington Park, Cal.

Illinois State Board of Examiners. Senate Room Capitol, Springfield, Ill. June 25-26, 1923.

NEW ENGLAND TUBERCULOSIS CONFERENCE

A Tuberculosis Eradication Conference will be held at Concord, N. H., June 12-13, 1923. This is the third such conference to be held in New England. A very comprehensive program is being arranged, and will be of equal interest and importance to the cattle breeder as well as the veterinarian or sanitary control official. Plan to attend.

PRELIMINARY REPORT ON THE DIFFERENTIATION OF VARIOUS ORGANISMS BELONGING TO THE HEMORRHAGIC SEPTICEMIA GROUP[1]

C. P. Fitch *and* E. N. Nelson,
University of Minnesota, St. Paul, Minnesota.

Knowledge is an asset in any line of work and as our information increases along certain lines of investigation, often times our opinions change. It is not many years ago, that Lignieres, Bollinger, Hüppe and Trevisan completed their contributions to the knowledge of the germs causing a group of conditions which the latter author referred to as the "Pasteurelloses." Additional work has given us much more light on many of these diseases, but there still remain many puzzling questions which are not yet satisfactorily answered. For example, the relation of the hemorrhagic septicemia organism to disease among swine and even more puzzling, the great apparent discrepancy between field and laboratory results in immunizing against this group of infections. It is quite possible that when more is known concerning the germs themselves, many of the intricate situations will become less complicated. It has been learned, in comparatively recent years, that lobar pneumonia, in man, is caused by a germ, the pneumococcus, which has several different types, only one of which lends itself to biological therapy. The continued study of the colon-typhoid group has shown many relationships which have aided in the prevention and control of the diseases caused by members of this class. The science of bacteriology is comparatively young and many unexplored vistas are before us.

Last year Jones presented a paper before this Association in which he pointed out that members of the hemorrhagic septicemia group possess various biological characters, especially as to their action on carbohydrate media. He was able to separate the organisms into three rather distinct groups. Group I fermented dextrose, lactose, saccharose, maltose and mannite, but did not alter greatly the hydrogen ion concentration of salicin. These organisms also produced hemolysis, but no indol. Group II acidulated dextrose and saccharose, but not the others. All produced indol and none were hemolytic. Group III, of two strains only, fermented dextrose, saccharose and mannite, but produced no acidity in lactose, maltose or salicin. Both

[1]Presented at the fifty-ninth annual meeting of the American Veterinary Medical Association, St. Louis, Mo., August 28 to September 1, 1922.

strains formed indol, but did not hemolyze red blood corpuscles. Group I was of relatively low virulence, Group II was slightly more virulent and one member of Group III was also virulent for rabbits. The results of the agglutination tests with serum from rabbits, immunized to organisms of each group, showed definite relationships. Jones summarizes his work by stating that, "It has been possible by studying their fermentation and other characters to divide them into three well-defined groups. In the main serological relationship has been found to follow the cultural grouping."

Meyer in 1915 studied a case of skin disease in a woman which he diagnosed as pemphigus vulgaris. From this he isolated an organism, which he considered belonged to the hemorrhagic septicemia group. In reviewing the literature on this phase, he states that Lorey found in the blood of a patient (man), who presented symptoms of abdominal typhoid, a hemorrhagic septicemia organism. Fränkel and Pielsticher found in the blood and bone marrow of a man who had been poisoned by a fish bone, an organism belonging to the same group. Saisawa also isolated a similar organism from a case of pseudo-tuberculosis of man. The organism isolated by Meyer came from the blisters of the case, and was pathogenic for white rats, but not for rabbits. The author explains this by stating that the germ had lost its pathogenicity for rabbits by its passage through man. He believes that a variety of diseases are caused in man by organisms belonging to the hemorrhagic septicemia group.

Busson in 1921 isolated two strains of an organism from an epizootic among guinea-pigs. These organisms he believed belonged to the hemorrhagic septicemia group. Both were motile, neither fermented lactose, but one produced gas in glucose and acidulated mannit and maltose. The other had no action on the carbohydrates but grew on potato. The author studied a large number of organisms, supposedly belonging to the hemorrhagic septicemia group, among which were several which have not been described as occurring in this country. It is most interesting to note that he also included in this group, the organism described by Billings in 1888 as the cause of Texas fever and which Smith pointed out in 1893, undoubtedly belonging to the colon-typhoid group. Busson, as well as the next investigators, includes many organisms in the hemorrhagic septicemia group, which according to the standards set in this country, do not rightfully belong to it. These German and Austrian investigators apparently do not

know of the work done in America. They have an entirely different basis for classifying their organisms, and are woefully ignorant of the bacteriological work published in this country. Busson concludes however, as a result of his studies, that there are many types in the hemorrhagic septicemia group.

Plasaj and Pribram divide the group into three separate orders in their system, based on a study of twenty cultures from the Kral museum. In the first order they made four groups, as designated by (1) *B. pestis*, (2) *B. pseudopestis*, (pseudo-tuberculosis rodentium), (3) *B. parapestis* (Fornet) and (4) *B. multoseptica*. This latter has three types, Alpha, Beta and Gamma, depending upon whether they are atrichial, monotrichial, or oligotrichial. These authors also found a varied serological relationship.

It is clearly apparent to anyone that bacteriological work carried on in this country and that done abroad, so far as this particular group is concerned, is not comparable, as the organisms studied are apparently widely different. The results of the foreign investigators here referred to are most interesting, in that they show somewhat definite serological grouping, even among the widely divergent types studied.

The work to be reported in this paper is merely preliminary to a thorough study of the organisms, commonly referred to in this country as the hemorrhagic septicemia group. We also intend to procure some from the Kral museum and other European sources. These will be compared with those isolated in this country. We have studied, to date, twenty-eight strains obtained from various laboratories in different parts of the United States. These were isolated from diseased animals (cattle, hogs, sheep and poultry). They were all short, non-motile rods.

Biochemical Results

The first problem we attacked was to learn if these organisms fell into three groups as determined by their action on various carbohydrate media. The method employed was that described by Fitch and Billings. The pH values, as determined by the indicators, were checked from time to time on a Leeds and Northrup portable potentiometer.

The following tables show the action of twenty-eight strains of organisms belonging to the hemorrhagic septicemia group on seven carbohydrates:

TABLE I

DEXTROSE

Culture Number	BOVINE STRAINS pH of Duplicate Cultures			Culture Number	PORCINE STRAINS pH of Duplicate Cultures			Culture Number	AVIAN STRAINS pH of Duplicate Cultures			Culture Number	OVINE STRAINS pH of Duplicate Cultures		
	3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation
	Uninoculated Control 7.4				Uninoculated Control 7.4				Uninoculated Control 7.4				Uninoculated Control 7.4		
15	6.4-6.4	6.4-6.4	6.4-6.4	13A	6.1-6.2	6.1-6.2	6.1-6.2	1666	6.3-6.3	6.3-6.3	6.3-6.3	52	6.4-6.4	6.4-6.4	6.4-6.3
12	6.4-6.4	6.4-6.4	6.4-6.4	19	6.4-6.4	6.4-6.4	6.3-6.3	1675	6.3-6.3	6.3-6.3	6.2-6.2	23	6.4-6.3	6.4-6.3	6.2-6.1
14	6.3-6.3	6.3-6.3	6.3-6.3	17	6.3-6.3	6.3-6.3	6.3-6.3	28	6.2-6.4	6.2-6.4	6.2-6.2				
18	6.2-6.2	6.2-6.2	6.4-6.2	11	6.3-6.3	6.3-6.3	6.3-6.3	58	6.1-6.2	6.1-6.2	6.1-6.1				
17	6.1-6.2	6.1-6.2	6.3-6.2	14	6.4-6.4	6.4-6.4	6.2-6.1	59	6.3-6.3	6.3-6.3	6.2-6.1				
22	6.4-6.3	6.4-6.3	6.5-6.4	12	6.5-6.5	6.5-6.5	6.4-6.4	6274	6.2-6.2	6.2-6.2	6.2-6.2				
20	6.4-6.5	6.4-6.5	6.3-6.3	64	6.3-6.3	6.3-6.3	6.3-6.3								
40	6.3-6.3	6.4-6.3	6.4-6.3	4	6.3-6.3	6.3-6.3	6.2-6.2								
1168	6.2-6.3	6.2-6.3	6.3-6.3	13	6.2-6.3	6.2-6.3	6.2-6.2								
6070	6.2-6.3	6.2-6.3	6.3-6.2	9	6.3-6.3	6.3-6.3	6.3-6.3								
	Avg.	Avg.	Avg.		Avg.	Avg.	Avg.		Avg.	Avg.	Avg.		Avg.	Avg.	Avg.
	6.30	6.21	6.33		6.32	6.32	6.26		6.25	6.25	6.19		6.37	6.37	6.25

TABLE II

LACTOSE

Culture Number	BOVINE STRAINS pH of Duplicate Cultures			Culture Number	PORCINE STRAINS pH of Duplicate Cultures			Culture Number	AVIAN STRAINS pH of Duplicate Cultures			Culture Number	OVINE STRAINS pH of Duplicate Cultures		
	3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation
	Uninoculated Control 7.4				Uninoculated Control 7.4				Uninoculated Control 7.4				Uninoculated Control 7.4		
15	7.4-7.4	7.3-7.3	7.3-7.3	13A	7.4-7.3	7.4-7.3	7.3-7.2	1666	7.4-7.4	7.3-7.3	7.3-7.3	52	7.3-7.3	7.3-7.3	7.3-7.3
12	7.3-7.3	7.2-7.3	7.2-7.1	19	7.2-7.3	7.2-7.3	7.2-7.2	1675	7.3-7.2	7.2-7.3	7.2-7.2	23	7.4-7.4	7.3-7.2	7.2-7.2
14	7.4-7.4	7.2-7.2	7.3-7.4	17	7.4-7.4	7.3-7.3	7.2-7.3	28	7.3-7.3	7.1-7.2	7.1-7.1				
18	7.3-7.2	7.2-7.2	7.4-7.4	11	7.2-7.2	7.2-7.2	7.2-7.2	58	7.3-7.2	7.3-7.3	7.2-7.3				
17	7.4-7.3	7.4-7.4	7.3-7.5	14	7.3-7.2	7.1-7.2	7.2 7.1	59	7.2-7.3	7.3-7.3	7.3-7.2				
22	7.4-7.4	7.3-7.3	7.4-7.3	12	7.3-7.4	7.2-7.1	7.3-7.3	6274	7.3-7.3	7.4-7.2	7.1-7.1				
20	7.2-7.2	7.2-7.2	7.3-7.2	64	7.4-7.4	7.3-7.3	7.3-7.3								
40	7.4-7.4	7.3-7.3	7.3-7.2	4	7.2-7.3	7.2-7.2	7.2-7.2								
1168	7.4-7.4	7.3-7.2	7.5-7.6	13	7.4-7.3	7.4-7.4	7.4-7.4								
6070	7.3-7.2	7.1-7.2	7.2-7.1	9	7.2-7.3	7.2-7.3	7.6-7.6								
	Avg.	Avg.	Avg.		Avg.	Avg.	Avg.		Avg.	Avg.	Avg.		Avg.	Avg.	Avg.
	7.33	7.25	7.31		7.30	7.25	7.28		7.29	7.26	7.20		7.35	7.27	7.25

TABLE III

SACCHAROSE

Culture Number	BOVINE STRAINS pH of Duplicate Cultures			Culture Number	PORCINE STRAINS pH of Duplicate Cultures			Culture Number	AVIAN STRAINS pH of Duplicate Cultures			Culture Number	OVINE STRAINS pH of Duplicate Cultures		
	3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation
	Uninoculated Control 7.5				Uninoculated Control 7.5				Uninoculated Control 7.5				Uninoculated Control 7.5		
15	6.6-6.6	6.4-6.4	6.3-6.3	13A	6.4-6.4	6.6-6.6	6.3-6.3	1666	6.5-6.4	6.7-6.7	6.7-6.7	52	6.6-6.7	6.6-6.6	6.4-6.4
12	6.8-6.8	6.5-6.5	6.3-6.3	19	6.4-6.3	6.4-6.4	6.4-6.3	1675	6.8-6.8	6.4-6.4	6.3-6.3	23	6.7-6.7	6.3-6.2	6.3-6.4
14	6.7-6.7	6.5-6.4	6.5-6.5	17	6.2-6.2	6.4-6.4	6.4-6.5	28	6.6-6.5	6.4-6.3	6.3-6.3				
18	6.8-6.6	6.6-6.6	6.2-6.2	11	6.4-6.4	6.5-6.6	6.3-6.3	58	6.8-6.8	6.7-6.7	6.4-6.5				
17	6.6-6.6	6.4-6.4	6.3-6.2	14	6.4-6.3	6.3-6.3	6.3-6.2	59	6.8-6.8	6.7-6.7	6.3-6.3				
22	6.8-6.8	6.3-6.3	6.4-6.6	12	6.6-6.6	6.4-6.4	6.4-6.2	6274	6.8-6.8	6.4-6.4	6.2-6.2				
20	6.4-6.4	6.3-6.3	6.3-6.4	64	6.8-6.7	6.3-6.3	6.4-6.3								
40	6.7-6.7	6.6-6.6	6.6-6.6	4	6.6-6.6	6.6-6.5	6.3-6.2								
1168	6.8-6.7	6.7-6.8	6.5-6.5	13	6.4-6.5	6.7-6.6	6.6-6.7								
6070	6.7-6.7	6.4-6.4	6.4-6.4	9	6.4-6.4	6.6-6.6	6.3-6.3								
	Avg.	Avg.	Avg.		Avg.	Avg.	Avg.		Avg.	Avg.	Avg.		Avg.	Avg.	Avg.
	6.67	6.47	6.39		6.45	6.47	6.35		6.70	6.54	6.37		6.67	6.42	6.37

TABLE IV

MANNITE

Culture Number	BOVINE STRAINS pH of Duplicate Cultures			Culture Number	PORCINE STRAINS pH of Duplicate Cultures			Culture Number	AVIAN STRAINS pH of Duplicate Cultures			Culture Number	OVINE STRAINS pH of Duplicate Cultures		
	3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation
	Uninoculated Control 7.4				Uninoculated Control 7.4				Uninoculated Control 7.4				Uninoculated Control 7.4		
15	6.9-6.9	6.4-6.4	6.3-6.3	13A	6.8-6.9	6.3-6.2	6.2-6.1	1666	6.7-6.7	6.3-6.4	6.2-6.2	52	6.7-6.7	6.4-6.3	6.3-6.3
12	6.8-6.7	6.2-6.3	6.1-6.1	9	6.8-6.8	6.2-6.2	6.2-6.1	1675	6.8-6.7	6.2-6.2	6.2-6.2	23	6.7-6.7	6.6-6.6	6.3-6.3
14	6.7-6.7	6.4-6.4	5.9-5.9	17	6.9-6.9	6.4-6.4	6.2-6.3	28	6.8-6.8	6.2-6.2	6.3-6.3				
18	6.7-6.8	6.4-6.4	6.0-6.0	11	6.8-6.8	6.4-6.5	6.3-6.2	58	6.8-6.8	6.1-6.1	6.1-6.2				
17	6.7-6.7	6.3-6.2	6.3-6.0	14	6.8-6.8	6.3-6.3	6.1-6.1	59	6.7-6.8	6.1-6.1	6.2-6.2				
22	6.6-6.7	6.4-6.4	6.3-6.2	12	6.7-6.7	6.4-6.5	6.3-6.3	6274	6.8-6.8	5.9-6.1	6.2-6.1				
20	6.8-6.7	6.5-6.5	6.5-6.7	64	6.7-6.8	6.4-6.4	6.4-6.4								
40	6.6-6.8	6.2-6.1	6.3-6.3	4	6.7-6.7	6.3-6.3	6.2-6.2								
1168	6.7-6.7	6.2-6.2	6.1-6.2	13	6.7-6.7	6.2-6.2	6.2-6.2								
6070	6.6-6.6	6.2-6.2	6.1-6.1	9	6.8-6.9	6.1-6.1	6.2-6.2								
	Avg.	Avg.	Avg.		Avg.	Avg.	Avg.		Avg.	Avg.	Avg.		Avg.	Avg.	Avg.
	6.72	6.32	6.28		6.78	6.30	6.22		6.76	6.15	6.20		6.70	6.47	6.30

TABLE V

MALTOSE

Culture Number	BOVINE STRAINS pH of Duplicate Cultures			Culture Number	PORCINE STRAINS pH of Duplicate Cultures			Culture Number	AVIAN STRAINS pH of Duplicate Cultures			Culture Number	OVINE STRAINS pH of Duplicate Cultures		
	3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation
	Uninoculated Control 7.6				Uninoculated Control 7.6				Uninoculated Control 7.6				Uninoculated Control 7.6		
15	7.2-7.2	7.2-7.2	7.4-7.4	13A	7.3-7.2	7.5-7.3	7.3-7.3	1666	7.3-7.4	7.3-7.3	7.4-7.4	52	7.4-7.4	7.4-7.4	7.4-7.3
12	7.3-7.2	7.3-7.3	7.3-7.3	19	7.5-7.6	7.2-7.2	7.4-7.3	1675	7.4-7.5	7.2-7.3	7.4-7.4	23	7.3-7.4	7.4-7.4	7.3-7.2
14	7.2-7.2	7.3-7.2	7.4-7.4	17	7.2-7.2	7.2-7.2	7.4-7.2	28	7.4-7.4	7.4-7.4	7.4-7.4				
18	7.2-7.2	7.2-7.4	7.2-7.2	11	7.4-7.4	7.4-7.4	7.5-7.7	58	7.2-7.4	7.3-7.3	7.4-7.3				
17	7.3-7.2	7.3-7.2	7.4-7.4	14	7.2-7.3	7.4-7.4	7.2-7.3	59	7.4-7.4	7.3-7.3	7.4-7.4				
22	7.2-7.4	7.2-7.2	7.5-7.5	12	7.4-7.4	7.4-7.4	7.2-7.1	6274	7.5-7.5	7.4-7.4	7.4-7.4				
20	7.3-7.3	7.3-7.3	7.3-7.2	64	7.5-7.6	7.4-7.4	7.5-7.5								
40	7.3-7.4	7.2-7.2	7.3-7.2	4	7.5-7.5	7.5-7.5	7.5-7.5								
1168	7.4-7.4	7.3-7.3	7.3-7.3	13	7.3-7.3	7.3-7.4	7.4-7.4								
6070	7.4-7.5	7.5-7.6	7.6-7.7	9	7.5-7.5	7.4-7.5	7.4-7.5								
	Avg.	Avg.	Avg.		Avg.	Avg.	Avg.		Avg.	Avg.	Avg.		Avg.	Avg.	Avg.
	7.29	7.28	7.36		7.39	7.37	7.38		7.40	7.32	7.39		7.37	7.40	7.30

TABLE VI

DULCIT

Culture Number	BOVINE STRAINS pH of Duplicate Cultures			Culture Number	PORCINE STRAINS pH of Duplicate Cultures			Culture Number	AVIAN STRAINS pH of Duplicate Cultures			Culture Number	OVINE STRAINS pH of Duplicate Cultures		
	3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation
	Uninoculated Control 7.6				Uninoculated Control 7.6				Uninoculated Control 7.6				Uninoculated Control 7.6		
15	7.4-7.4	7.2-7.2	7.2-7.2	13A	7.3-7.4	7.3-7.2	7.3-7.2	1666	7.4-7.4	7.2-7.2	7.2-7.2	52	7.4-7.4	7.2-7.2	7.2-7.2
12	7.3-7.4	7.2-7.3	7.2-7.2	19	7.4-7.4	7.2-7.2	7.2-7.2	1675	7.4-7.5	7.2-7.2	7.2-7.1	23	7.2-7.4	7.2-7.2	7.2-7.1
14	7.3-7.3	7.4-7.4	7.2-7.2	17	7.3-7.3	7.1-7.1	7.3-7.3	28	7.4-7.4	7.2-7.1	7.1-7.1				
18	7.3-7.2	7.2-7.2	7.2-7.3	11	7.4-7.5	7.3-7.3	7.2-7.2	58	7.3-7.3	7.1-7.1	7.2-7.2				
17	7.4-7.4	7.3-7.3	7.2-7.1	14	7.5-7.5	7.4-7.4	7.2-7.2	59	7.3-7.3	7.3-7.3	7.3-7.2				
22	7.3-7.4	7.2-7.2	7.1-7.1	12	7.4-7.4	7.4-7.4	7.2-7.1	6274	7.3-7.5	7.4-7.4	7.1-7.1				
20	7.3-7.4	7.3-7.3	7.2-7.3	64	7.3-7.3	7.2-7.2	7.2-7.2								
40	7.5-7.5	7.2-7.3	7.1-7.1	4	7.5-7.5	7.3-7.3	7.2-7.1								
1168	7.6-7.6	7.1-7.2	7.1-7.1	13	7.4-7.4	7.2-7.2	7.2-7.2								
6070	7.4-7.5	7.2-7.3	7.2-7.2	9	7.4-7.4	7.2-7.2	7.4-7.4								
	Avg.	Avg.	Avg.		Avg.	Avg.	Avg.		Avg.	Avg.	Avg.		Avg.	Avg.	Avg.
	7.39	7.25	7.17		7.40	7.25	7.22		7.37	7.22	7.16		7.35	7.2	7.17

TABLE VII

SALICIN

Culture Number	BOVINE STRAINS pH of Duplicate Cultures			Culture Number	PORCINE STRAINS pH of Duplicate Cultures			Culture Number	AVIAN STRAINS pH of Duplicate Cultures			Culture Number	OVINE STRAINS pH of Duplicate Cultures		
	3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation		3 Day Incubation	7 Day Incubation	12 Day Incubation
	Uninoculated Control 7.6				Uninoculated Control 7.6				Uninoculated Control 7.6				Uninoculated Control 7.6		
15	7.2-7.2	7.2-7.2	7.2-7.1	13A	7.2-7.2	7.2-7.1	7.1-7.1	1666	7.3-7.3	7.2-7.2	7.2-7.2	52	7.4-7.4	7.4-7.4	7.4-7.4
12	7.2-7.2	7.5-7.4	7.2-7.2	19	7.4-7.4	7.3-7.3	7.2-7.2	1675	7.2-7.2	7.1-7.2	7.1-7.1	23	7.3-7.2	7.4-7.4	7.3-7.3
14	7.2-7.2	7.3-7.3	7.1-7.1	17	7.6-7.5	7.4-7.4	7.3-7.2	28	7.6-7.6	7.5-7.5	7.2-7.2				
18	7.3-7.4	7.3-7.2	7.2-7.2	11	7.4-7.4	7.3-7.3	7.2-7.2	58	7.5-7.4	7.7-7.5	7.2-7.3				
17	7.4-7.3	7.3-7.2	7.3-7.3	14	7.5-7.6	7.3-7.3	7.2-7.1	59	7.3-7.3	7.3-7.3	7.1-7.1				
22	7.2-7.2	7.4-7.4	7.3-7.2	12	7.3-7.4	7.2-7.2	7.3-7.2	6274	7.4-7.4	7.3-7.3	7.2-7.2				
20	7.3-7.3	7.2-7.2	7.1-7.1	64	7.5-7.5	7.3-7.3	7.3-7.3								
40	7.4-7.3	7.4-7.3	7.3-7.3	4	7.4-7.5	7.4-7.3	7.3-7.4								
1168	7.3-7.3	7.2-7.2	7.1-7.2	13	7.3-7.3	7.6-7.6	7.2-7.2								
6070	7.3-7.3	7.4-7.4	7.2-7.2	9	7.4-7.3	7.3-7.4	7.2-7.3								
	Avg.	Avg.	Avg.		Avg.	Avg.	Avg.		Avg.	Avg.	Avg.		Avg.	Avg.	Avg.
	7.27	7.30	7.18		7.41	7.33	7.22		7.37	7.34	7.17		7.32	7.40	7.35

Tables showing the action of twenty-eight strains of organisms belonging to the hemorrhagic septicemia group on seven carbohydrates:

Tables I-VII show that the results were surprisingly uniform, and that all strains acted approximately the same in the particular carbohydrate medium. No groups could be differentiated by this method. It will be noted that all strains acidulate dextrose, saccharose and mannite, while lactose, maltose, dulcit and salicin are changed but little. All the organisms fall into Jones' Group III. The tables show that often the cultures incubated for twelve days developed the greatest amount of acid. This is especially true of mannite. The strains of bovine, porcine, avian and ovine origin, all showed approximately the same changes. All strains were slightly more acid after incubation than the uninoculated control. This change was not great enough nor sufficiently uniform to be relied on for differential purposes. None of the strains produced gas in any media. These results agree with those reported by Besemer for hemorrhagic septicemia organisms isolated in this country, (except J^2 which acidulated dulcit) and corresponds to the cultural requirements ordinarily expected of organisms in this group.

Serological Results

A rabbit was immunized to avian strain 1666. Great care had been taken in the immunizing process, as apparently this strain was quite pathogenic and several rabbits were killed before a suitable serum was procured. Table VIII shows the results of the agglutination test of this immune serum on the twenty-eight strains:

It will be noted that the organisms fall into four fairly well-defined groups, depending on their agglutinability by this serum. There seems to be little if any difference between the strains isolated from the different species of animals. For example, bovine strains appear in each group. There does, however, appear to be a marked serological difference between certain of the cultures.

A second series of rabbits were immunized to porcine strain 14, one of those which were not agglutinated by the immune serum of avian strain 1666. Table IX shows the results of the agglutination tests with this latter serum, on the strains which were not affected by the first serum.

TABLE VIII

RESULTS OF AGGLUTINATION TESTS OF VARIOUS STRAINS OF THE HEMORRHAGIC SEPTICEMIA GROUP WITH SERUM OF RABBIT IMMUNIZED TO AVIAN STRAIN 1666

ORGANISM		DILUTIONS					
		1–20	1–40	1–80	1–160	1–320	1–640
Bovine	6070	+	+	+	+	+	+
Bovine	20	+	+	+	+	+	+
Bovine	40	+	+	+	+	+	+
Bovine	14	+	+	+	+	+	+
Bovine	17	+	+	+	+	+	+
Porcine	19	+	+	+	+	+	+
Porcine	12	+	+	+	+	+	+
Avian	59	+	+	+	+	+	+
Avian	1666	+	+	+	+	+	+
Avian	6274	+	+	+	+	+	+
Avian	58	+	+	+	+	+	+
Avian	1675	+	+	+	+	+	+
Bovine	12	+	+	+	+	−	−
Bovine	22	+	+	+	+	−	−
Porcine	4	+	+	+	+	−	−
Ovine	52	+	+	+	+	−	−
Bovine	15	+	+	+	−	−	−
Porcine	64	+	+	+	−	−	−
Porcine	11	+	+	+	−	−	−
Porcine	13	+	+	+	−	−	−
Avian	28	+	+	+	−	−	−
Ovine	23	+	+	+	−	−	−
Bovine	18	−	−	−	−	−	−
Bovine	17	−	−	−	−	−	−
Bovine	1168	−	−	−	−	−	−
Porcine	13A	−	−	−	−	−	−
Porcine	14	−	−	−	−	−	−
Porcine	9	−	−	−	−	−	−
Normal Serum		−	−	−	−	−	−
No Serum		−	−	−	−	−	−

TABLE IX

RESULTS OF AGGLUTINATION TESTS OF VARIOUS STRAINS OF THE HEMORRHAGIC SEPTICEMIA GROUP WITH SERUM OF RABBIT IMMUNIZED TO PORCINE STRAIN 14

ORGANISM		DILUTIONS					
		1–20	1–40	1–80	1–160	1–320	1–640
Bovine	18	+	+	+	+	+	+
Bovine	17	+	+	+	+	+	+
Bovine	1168	+	+	+	+	+	+
Porcine	14	+	+	+	+	+	+
Porcine	9	+	+	+	+	+	+
Porcine	13A	–	–	–	–	–	–

It will be noted that all of the six strains, with one notable exception, are completely agglutinated by this serum. The exception is another porcine strain which was not in the least agglutinated. These results rather clearly show that there is a serological grouping between the strains studied even though their biochemical actions have failed to show distinction.

Pathogenicity Studies

A few tests have been made of the virulence of some of the strains. Avian strain 1666 is very pathogenic for rabbits, one ten-thousandth of a platinum loop taken from an agar culture injected subcutaneously, produced death uniformily in 24 hours. Avian strain 58 was likewise very virulent for rabbits. Bovine strain 18 was quite avirulent, as was also porcine strain 14. It will be noted that as far as has been determined, the pathogenicity tests agree with the serological grouping.

Discussion

The results of this preliminary work show that there are many strains of hemorrhagic septicemia organisms in this country, which have a constant action on carbohydrates and which cannot be differentiated by this biochemical method. On the other hand, bacteria have been isolated and described which may belong to this group but which have a different action on carbohydrates. It is interesting to record that DeKruif, working with two varieties of a microbe existing in cultures of the rabbit septicemia bacillus, found that although mutation took place

and some quite different characters developed, their fermentation reactions remain indistinguishable. He refers to these as types D and G, the former being the parent stock.

Foreign investigators apparently have no regard for the report of the Committee of the Society of American Bacteriologists on characterization and classification of bacterial types. This report classifies, under the Pasteurella, "Gram-negative rods, aerobic and facultative. Powers of carbohydrate fermentation slight, no gas produced, gelatin not liquified. Parasitic, frequently pathogenic, producing plague in man and hemorrhagic septicemia of animals." The European investigators have a much larger hemorrhagic septicemia group, including motile and non-motile organisms, and those which produce gas. Their grouping is not comparable to ours.

It would seem from the limited work done that the organisms of the hemorrhagic septicemia group possess serological relationships, and that continued work may demonstrate rather definite types for this group of bacteria and thereby possibly clear up some of the puzzling problems which now confront the laboratory worker and the clinician, dealing with hemorrhagic septicemia in its various forms.

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DISCUSSION

DR. V. A. MOORE (Ithaca, N. Y.): I am much interested in the results of the work shown in the paper by Dr. Fitch. I feel, however, that the uniformity in the tests made of the cultures studied may not obtain in the pathogenesis or disease-producing form of the different members of the so-called septicemia hemorrhagica group of bacteria.

I have had occasion, this past winter, to observe the examination of a considerable number of lungs of cattle that died, supposedly from the pectoral

form of septicemia hemorrhagica. In some of them *Bacterium bovisepticum* was present and in others it could not be found. This suggests the possibility that the lungs from which it was isolated were from cows that carried this organism in their upper air passages and that the primary cause of the disease from which they died may still be undetermined. The results such as those given in the paper are instructive and will be of much aid in the final analysis of this puzzling group of bacteria.

DR. C. D. MCGILVRAY (Toronto, Can.): I am inclined to favor the view expressed by Dr. Moore, that a diagnosis of hemorrhagic septicemia is probably not justified in so many instances. The prevailing tendency appears to be where doubt exists as to an exact diagnosis that hemorrhagic septicemia is the most acceptable. This seems to apply to some extent both to diagnosis in the field and in the laboratory.

BOVINE TUBERCULOSIS

Much has been said and written about the danger of bovine tuberculosis to man without much headway having been done to suppress the disease in cattle, and thus do away with that danger to man. But what is a very great menace to the health of children is the tuberculous dog and cat, which are very far from rare in this country. This danger is much more accentuated than bovine tuberculosis because the dog is mostly affected with the human type and the cat stands about midway. Just imagine people fondling and kissing cats and dogs with open tuberculosis. It is frequently done.

Not so many years ago the writer had brought to his notice a dog that belonged to a physician who was suffering from tuberculosis and his wife was dying from that malady. The physician and his veterinary surgeon complained that the animal had a painful disease of the rectum, which no doubt he had. But what struck the writer at once was the general tubercular expression of the creature, so much so that he declared the condition to be one of tuberculosis. A fortnight later the animal was destroyed and generalized tuberculosis was discovered on post mortem. Such an example could be multiplied again and again. As in France and elsewhere, the majority of dogs affected with tuberculosis belong to publicans and restaurant keepers.—HENRY GRAY, M. R. C. V. S., *in Veterinary Notes, Journal of State Medicine (London).*

A DISCUSSION OF THE FACTORS CONCERNED IN THE ETIOLOGY OF EQUINE INFLUENZA AND CONTAGIOUS PNEUMONIA[1]

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Because of the confusion which has existed in the classification of the diseases incident to the shipment of animals of the equine genus, it will probably be well to preface my remarks by defining, briefly, influenza and contagious pneumonia as here considered.

We start first with the general term "shipping fever," a term which covers collectively that group of epizootic infections which are incident to the shipment of so-called "green" horses and mules. In this group we recognize three separate and distinct entities, namely, influenza, contagious pneumonia and strangles.

In influenza proper, we recognize an acute, febrile, systemic infection, characterized chiefly by catarrhal inflammation of the mucous membranes, and accompanied frequently with inflammatory swellings of the tendons, tendon-sheaths and subcutis.

Contagious pneumonia is that condition which has frequently been spoken of as the pectoral form of influenza. It manifests itself as a croupous or pleuro- pneumonia. That contagious pneumonia is a separate and distinct entity, apart from influenza, is now generally conceded by most investigators. This view is substantiated by the fact that a type of filterable virus has been proven the cause of influenza, whereas no such evidence is forthcoming in contagious pneumonia; and further, by the fact that animals recovering from true influenza possess a substantial immunity against further attacks of that disease but are still readily susceptible to contagious pneumonia. Conversely, horses which have suffered from contagious pneumonia are less susceptible to further attacks of such disease but are readily susceptible to influenza. Of course, it should be recognized that influenza and contagious pneumonia run hand in hand. Factors promoting one disease are equally favorable for the other. Thus

[1]Presented at a Conference of Veterinarians, School of Veterinary Medicine, University of Pennsylvania, Philadelphia, Pa., February 27th and 28th, 1923.

the two diseases often occur simultaneously in the same group or stable of animals.

It is not necessary to say much about distemper or strangles; its identity as a separate entity, with *Streptococcus equi* (Schütz) as the etiological factor, is well established. I might mention in passing, however, that my remarks on the factors contributing towards influenza and contagious pneumonia, in general, apply equally to strangles.

Etiology of Influenza and Pneumonia

Now as to the primary etiological factors concerned in influenza and contagious pneumonia. Back in 1882, Dieckerhoff demonstrated that influenza could be transmitted to susceptible animals by the intravenous and subcutaneous injection of warm blood from affected animals. Later Poels demonstrated the filterability of the virus by producing the disease in susceptible horses through the inoculation of Berkefeld-filtered semen from a stallion which was known to have infected mares which it had been permitted to serve. Subsequently, Poels produced the disease by the inoculation of Berkefeld-filtered blood-serum from a horse which had been artificially infected. Bacteriological examination of these virulent, filtered inoculums failed to give positive cultural results or to reveal visible organisms microscopically. Thus, the causative factor in equine influenza has been established as an ultramicroscopic, filterable virus. These results have been confirmed by a number of investigators.

As regards contagious pneumonia, I feel that all we can say regarding a specific etiological factor, is that, at present, the cause of the disease is not definitely known. Some time ago Gaffky and Luhrs demonstrated in the mononuclear cells in secretions from the air passages of horses in the early stages of contagious pneumonia, some rod-shaped or pyriform, protozoan-like bodies containing eosin-staining granules. They believed these cell inclusions to be the cause of the disease. Some support has been accorded the views of Gaffky and Luhrs by other investigators, including our own federal Bureau of Animal Industry, this latter institution observing these cell inclusions in specimens from several cases of contagious pneumonia occurring in a severe outbreak of the disease which originated at National Stock Yards, Ill., in 1913. While these findings are interesting, and may later prove significant, it cannot, at present, be stated that these cell bodies have been definitely shown to be the cause of equine contagious pneumonia.

We cannot pass from a consideration of specific factors in contagious pneumonia, without referring briefly to the fact that we have several types of bacteria associated with the disease which are of importance as secondary factors. Chief among these is the streptococcus, closely related to, if not identical with, the *Streptococcus equi*, the recognized cause of strangles. Schütz demonstrated this organism in the lungs of cases of contagious pneumonia. As he found it present in the tissue in pairs, he termed it "*Diplococcus pneumoniae*," and considered it the cause of the disease. It has been shown, however, that this so-called "diplococcus" of Schütz appears as such only in tissue lesions, while in exudates and in cultures it forms chains, thus establishing its identity as a streptococcus. It has been further shown that it is a secondary invader, rather than the true cause of the disease.

Other Secondary Invaders

Another secondary factor of relative importance is *Bacillus bipolaris septicus* or *Pasteurella equiseptica*. This organism has, in the past, likewise been considered as the true cause of contagious pneumonia by several investigators. This bacillus is frequently found in the lungs of affected horses, associated with the streptococcus. It is also occasionally found in the blood and in the nasal secretion. Its role as a secondary factor, rather than the true cause of contagious pneumonia, has been well established.

Numerous other bacteria have been isolated and described from time to time by various workers in connection with contagious pneumonia. These include *Bact. coli*, *B. paratyphosus*, *Ps. pyocyaneus*, *Act. necrophorus*, staphylococci, pneumococci, etc.

There is just one other point to which I would like to call your attention, before leaving specific factors in the etiology of these diseases, and that is the fact that in influenza, we occasionally observe carriers, such as are met with in typhoid and diphtheria in the human family. The stallion, with whose semen Poels worked, while in apparent perfect health, continued to eliminate the influenza virus with his semen for months. Further, Basset demonstrated the blood of a horse which had recovered from an artificial inoculation, to be infectious three and one-half months subsequent to recovery. Other investigators have had similar experiences. Thus in considering factors concerned in the transmission of influenza, we have a carrier problem to reckon with.

To summarize now, our knowledge of specific etiological

factors concerned in equine influenza and contagious pneumonia: We find ourselves, on one hand, pointing to that great group of so-called filterable viruses for the cause of influenza, and in contagious pneumonia—omitting the bare possibility that the cell inclusions of Gaffky and Luhrs are the cause of the disease—we observe ourselves clinging to a number of secondary agents. It is indeed regrettable that we cannot break through that great barrier that stands between us and that vast field of filterable viruses. We pass a fluid through one of the several types of bacteria-retaining filters, find it culturally and microscopically sterile, yet infective, and it goes in the one big class of ultramicroscopic, filterable viruses. Here we must stop. We cannot hazard even a guess as to whether our infective agent is protozoan, bacterium or whatnot.

Human Influenza

I would like to digress here just a moment, to refer to the work of Olitsky and Gates, of the Rockefeller Institute, on human influenza. These investigators, back in 1918, isolated a minute, filter-passing anaerobe, which, after 4 years of investigation, they feel is the cause of human influenza. Whether or not later work by other investigators will confirm their conclusions, is a matter of speculation. However, the point I wish to make here is, that irrespective of whether or not such confirmation is forthcoming, they have made one, big, outstanding point, and that is, they have demonstrated conclusively that there exists in connection with influenza in man, a type of filter-passing, delicately-growing, strict anaerobe, which has heretofore been missed. In other words they have pointed to possibilities in a field which has been little explored. Because of the analogy which exists between human influenza and influenza of horses —and we might say canine distemper and possibly extend it to the so-called "flu" of hogs, recently described—I feel that investigations, directed along the lines indicated by the work of Olitsky and Gates, might bear fruit.

I now come to that part of my paper which I particularly wish to emphasize. We have discussed the specific etiology of influenza and contagious pneumonia and found that we are still in the dark regarding the subject. However, in connection with the incidence of these diseases there are some few things of which we are sure. We know, in the first place, that when we ship young western animals east, and country horses to the city, over our railroads, we have influenza and contagious pneumonia.

We know that with increased traffic in equine stock, such as existed during the days of the war, there is a tremendous increase in the number of cases of influenza and contagious pneumonia. We recognize that conditions incident to shipment are potent factors in the production of the disease. We have observed that energetic sanitary measures, coupled with such means as can be adopted to protect the animal against conditions which tend to lower its normal resistance, constitute the best we have to combat these maladies.

Contributory Causes

Let us, for a moment, consider briefly some of the conditions to which the horse and mule in transit are subjected. We see young, "green" horses being brought in from the country to an assembling point, and loaded 20 to 25 in stock cars on a siding. They are excited and nervous, so that by the time the train is actually ready to start on its trip, they are worked up to a "steaming sweat." In such condition they are whirled across the country at the rate of 25 to 50 miles per hour, often under the most adverse weather conditions. In some cases the shipment originates in a section of the country where mild weather is enjoyed. The animals leave such climate to ride through—a few hours later—sections in the throes of a winter blizzard. Then comes the frequent stops so characteristic of the freight train. This gives the animals a chance to recover from their first chill and again "steam up." Then the train pulls out and the chilling process is renewed. In the meantime any infection present in the cars, whether there originally or introduced by one or more animals in the shipment, finds ready victims.

Perhaps the journey is a long one. In such event the 28-hour law must be complied with, so the animals are loaded off in pens on a siding. These pens may be in poor sanitary condition and may have held an infected shipment just a short time prior to the arrival of our present consignment; there may be portions of contaminated forage left in them. Our animals in their state of weakened resistance, furnish fertile material for the activities of the influenza and contagious pneumonia organisms.

Then we must not forget the large city sales stables and stockyards. They must be recognized as most potent factors in the spread of these diseases. Horses from all sections are shipped into these big centers, pass through the yards and sales stables, and are reshipped to other sections. In such movements infection is

brought in by some and taken out by others, thus keeping the virus well distributed all along the line.

During the latter part of 1917 reports reaching the office of the Surgeon General, indicated that equine influenza, contagious pneumonia and strangles, among Army animals, constituted by far the most serious problem with which the Veterinary Corps had to contend at that time. During October 1917, out of some 77,000 animals, there were approximately 12,000 admitted to sick report and 800 deaths, the vast percentage of these admissions and deaths being due to some type of shipping fever. At one time the losses from shipping fever were costing the Government over $100,000 per week. I might cite you numerous additional data to stress the great importance of this problem to the Army, but I do not want to burden you with figures.

Aided by the federal Bureau of Animal Industry, steps were taken to keep all horse sections of stock yards, sales stables, collecting, feeding and watering points, and all stock cars used by contractors furnishing animals to the Government, properly cleaned and disinfected. Further, all remount depots were advised that unless they too maintained their premises in good sanitary condition and as free from infection as possible, measures taken elsewhere would, to a large extent, be nullified. Officers on purchasing boards were urged to exercise the greatest care possible to guard against purchasing animals in the incubative or early stages of the disease. It was also directed that precautions be taken to prevent the shipment of animals with elevated temperatures.

Results of Disinfection

That these efforts were fruitful is evidenced by the fact that weekly death reports for the four weeks in December 1917 and the first week in January 1918 showed a diminution in deaths as follows: .52%; .40%; .37%; .28% and .27%. These figures obtained in spite of the fact that the number of animals was constantly increasing. Further, weather conditions were less favorable during the latter part of this period than in the beginning.

It might be well at this point to recite some of the instructions given by the Surgeon General's Office to yard inspectors detailed to supervise these sanitary measures. They were instructed, in part, as follows:

"For the purpose of improving sanitary conditions at the point to which you have been assigned, in connection with yards and stables used in the purchase and forwarding of animals intended for public service, you should

insist upon all such yards and stables being placed immediately in good sanitary condition. Such disinfection as is necessary should be promptly carried out. The necessary labor and materials should be furnished by the railroad or stock company owning the yards. Any failure on the part of the owners to carry out your recommendations should be immediately reported to this office. The Quartermaster General has agreed to stop all shipments over railroads which fail to carry out the measures recommended.

"Stock pens are to be thoroughly cleaned by the railroad. This is to be followed by the application of a 3% solution of any disinfectant containing 50% cresylic acid. Low places are to be filled in with small stones, cinders or screenings. Stock cars, when ordered for loading, are to be thoroughly cleaned of all litter and manure, and inspected and put in safe condition for shipments, by the railroads. Cleaning and disinfecting of cars must be done by the railroads at way stations and points along the line other than remount depots and auxiliary remount depots. When cars are to be loaded at auxiliary remount or remount depots, the railroads are to furnish, at a proper charge, sufficient bedding, such as sawdust, cinders or sand, to be placed in the cars by the officer in charge after the veterinarian has satisfied himself that said cars have been properly cleaned and disinfected.

"The ground in infected corrals must be thoroughly scraped, and the scrapings removed to a safe location outside of the corrals. Strict attention should be given to quality of the forage, and forage left by outgoing shipments should be collected and burned. Water left by outgoing animals should be removed from all troughs and the troughs properly cleaned and disinfected."

Another point I might mention is, that early in the war it was held that the 28-hour law could not apply to the movement of Army animals. Consequently a number of animal shipments were sent through to their destination without unloading, in spite of the fact that the trip consumed more than 28 hours. Such action sent the sick and death rates soaring and soon resulted in orders for strict adherence to the 28-hour law.

I want to state that I have had the opportunity to look over the records and reports of the federal Bureau of Animal Industry, covering an extensive investigation which the Bureau conducted during the period 1916-1919. They had an inspector visit all of the principal horse markets of the country, trace shipments, and study shipping fever from the angle of transmission. These reports, which include statements from large shippers and dealers operating large sales stables, are practically unanimous in stating that losses from diseases, incident to the shipment of horses and mules, were materially reduced when measures to improve the sanitary condition of barns, sheds, pens, chutes, cars, etc., were carried out.

Biological Therapy

I am asked to discuss the use of biological products in the control of influenza and contagious pneumonia. I had intended to omit any reference to this phase of the subject; first, because it was not germane to my topic, and secondly, because I did not want to be responsible for drawing out a discussion which almost invariably follows when this point is brought up. However, as a

question has been put to me, I will answer by saying, frankly, that in my opinion the results from serums, vaccines, bacterins, etc., in these diseases, have been disappointing. I do not feel that the incidence of equine influenza or contagious pneumonia has been lowered as a result of their use. Further, when it comes to the use of bacterins in the treatment of influenza and contagious pneumonia, I am absolutely opposed to such practice. There is no scientific basis for it; it is simply adding to the burden of an animal whose defensive forces are, at the time, being severely taxed to overcome an acute systemic disturbance. Then, we cannot disregard the fact that the use of something which may be looked upon as a specific by the practitioner, too often tends to impart a false sense of security and thus cause him to neglect measures which he might otherwise take to alleviate or prevent the disease.

I believe that if the attention, efforts and money expended on these factors, shown to be of secondary nature, were employed with a view to improving our knowledge of the primary agents concerned in these diseases, a more useful purpose would be served. We would at least be going at the problem from the proper angle. By these remarks, I do not want to give the impression that I am in any way opposed to biological therapy, or to the use of biologics in the prevention of disease, where the agents employed are of established value. Failure to take advantage of the biological product whose worth has been proven, is a refusal to utilize a powerful factor in the control and prevention of disease. Further, I am heartily in favor of giving new products, with scientific foundation, every possible chance of proving any merits which they might have. On the other hand, when various products have been used over a long period of time in connection with certain specific diseases, with no real definite results of a favorable nature, I would feel very loath to recommend continued use of same.

In concluding these remarks I wish again to emphasize that with our limited knowledge of specific etiological factors in influenza and contagious pneumonia, and in the absence of specific immunizing agents of definite value, measures tending to keep the infection along the line of transit at a minimum, and those which will tend to protect the animal against conditions which lower its normal resistance, promise more in the way of relief in these diseases than any other measures we might at present take.

SOME TROUBLES MET IN IMMUNIZING AGAINST HOG CHOLERA

By E. R. STEEL, D.V.M., *Grundy City, Iowa.*

(*Continued from page 59, April Journal*)

I do not like to use serum alone, except in suckling pigs, for serum-alone immunity is relative and may last from several days to several weeks in different individuals. If cholera exists in the herd, some of the animals, losing their temporary immunity early, pick up the infection from carriers and the disease will be dragged out over months as the hogs lose their temporary immunity and pick up the infection. Besides, to get an owner to handle hogs again is hard to do, and if the hogs get the flu again he has the same risk to run as before. By increasing the dosage of serum, to offset devitalizing influences, virus may be used with safety. To discriminate in the use of virus in sick herds, giving only serum to those running a fever is folly, for hogs run a fever with worms, pneumonia, ulcerative enteritis, flu, and from handling in warm weather. It is hard enough to pick cholera pigs in the laboratory with a daily temperature chart.

It is argued by some that temperatures should be taken to tell how extensively the infection exists in the herd. All that can be told by one temperature-taking is that sickness exists in the herd; not how extensive it is in every instance. I have given pigs, inoculated with virus, but not sick, and running a normal temperature, immense quantities of serum and have had them develop cholera within a few days in as large a percentage as the other virus pigs left without serum. It is doubtful if serum has any value in already-sick, cholera hogs and giving virus to them certainly won't make them sicker. The dosage of serum should be increased in the apparently well hogs, for in them we may head off the infection. Just how long after inoculating with virus it will do this, I have never heard reported. The pigs experimented with above had gone eight days. Of course, in the field, infection is generally not so uniform; but it may be if the pigs are all exposed at the same time. The prognosis should always be guarded.

The percentage of recoveries in sick hogs varies in different herds. Even giving virus alone to pigs, some of them will recover and sometimes many won't get sick at all. Hoskins[13] reports:

> "On the average it is safe to assume that about 14% of pigs weighing between 40 and 140 pounds have sufficient natural immunity to resist fatal infection with virulent virus."

Reading thermometers and handling syringes is rather poor hygiene, and trying to discriminate as to use of virus with one temperature-reading, may lead either to false hopes or to leaving many hogs with a temporary immunity which will break later, if exposed to cholera, and will thus lead to confusion, the operator thinking he has hemorrhagic septicemia, mixed infection, and other diseases that may be associated with cholera.

As regards administration, the practitioner should acquire a habit for careful work. A clean, dustless place to work, a sanitary place to keep hogs after vaccination for a few hours to allow needle-puncture holes to close, or a pasture free from mud holes to turn them into, should be insisted upon. Instruments should be boiled or otherwise sterilized after each job. I prefer boiling them. I like the axillary spaces to inject the serum, splitting the dose, and the ham for the virus, injecting it deeply intramuscular. As for the intraperitoneal injection of serum, I have not used it extensively because I think that the peritoneum can be infected more easily and the consequences are worse than in muscle, if infection should occur. For treating the point of injection, I use tincture of iodine, keeping a rubber finger-stall on my index finger that touches the skin. Feeding lightly after vaccination is important, for over-feeding certainly does influence pigs inoculated with virus; and a test may be thrown off with one overfeed.

As I have shown, the dose of serum should be regulated according to conditions, although I believe if the label dose were increased 10 cc on small pigs, we would have less post-vaccination troubles. On large animals the label dose could be cut with safety. With virus, I use 3 cc for small pigs and 5 cc for large ones, simply that I may not pass up some for want of absorption of enough of it, dosage of virus being only a question of whether the pig gets it or doesn't. Abscesses following vaccination are not necessary and are due either to contaminated serum or virus, or to contamination by the operator, generally the latter. The hurry of practice tends to make us careless, but the administration of serum and virus should be considered an operation and careful technic acquired by habit. Technic is something a farmer won't acquire, for even on farms where I vaccinate regularly twice a year, I find I have to insist that cleanliness be observed, and I believe that in handling serum and virus and syringes they would become just as careless. A veterinarian knows better and should live up to his professional training if he doesn't want his

work compared with that of farmers.

The handling of serum and virus and keeping a record is another item that should be considered. Serum and virus should be bought in quantities large enough to vaccinate at least three herds with the same serial, if the veterinarian has an outlet for it. Buying in test lots is a splendid way also, for each job is another test under field conditions. Then a record should be kept of every herd treated, even if only a few pigs. Some of the serum companies have record books they give away, which include the following points: Date of treatment, owner's name, number treated, average weight, number killed for diagnosis, number with high temperature, history of exposure, number sick when treated, number that died before treatment, kind of serum, serial number, amount used, kind of virus, serial number, amount used, additional treatment, and total charge.

Such a record will stand in court, and I have found it good in explaining troubles met incident to immunization. If temperatures are not taken in supposed-well herds, it will act as a check on the potency of the serum, for if one herd loses several pigs and the other herds given the same serial do not have losses, previous infection of some sort may be suspected. By keeping your own record, you do not have to depend on the serum company's statement that the serial of serum proved O. K. in other herds. It is a protection to the owner of the hogs, to the veterinarian doing the work, and to the serum company if unjustly criticized.

Another feature in handling serum and virus is the care it should receive. Within a few moments after they are withdrawn from the animal, serum and virus are chilled in ice water and are later kept in an ice-box until ready for distribution. They should be shipped then, in refrigerator cars, or otherwise packed and kept cool in going to distributing points. From there, if shipped over long routes and on the road many hours or a few days in transit, in hot weather, they should be packed in saw dust and ice, preferably with an ice-chamber in the center of a wooden box. After the veterinarian receives them, they should be placed in an ice-box or other sufficiently cool place. I use an ice-box in the late spring, during the summer and early fall, and my fruit-cellar in the winter, keeping a thermometer in them all the time and giving it occasional observation. An even temperature of 40 to 50 degrees F. is thus maintained. To keep an ice-box going that will hold 50,000 cc of serum and necessary virus, it has cost me $32 during the last year. I have an ice-box also that I carry

in my car, which holds 12,000 cc of serum and necessary virus. By putting a chunk of ice in it the size of a double fist, it maintains a temperature of about 50 degrees F. all day in the summer. In the winter I put hot water in the ice compartment and I find it will maintain an even temperature of about 40 to 50 degrees at about zero atmospheric temperature, the exact temperature desired being regulated by cooling the water.

The advantages of this ice-box are evident. A surplus supply of serum and virus can be carried and kept at a uniform temperature, for it is hard to take just the exact amount required for a job. In the summer we often vaccinate all day. Large bottles of serum may be tapped to finish a job and the balance kept at refrigeration, although I prefer to get small bottles of the same serial for this purpose. Opened virus should be discarded, however, for it is very sensitive to contamination. Virus is much more delicate to handle than serum, especially clear serum. Heated to atmospheric temperature in the summer, it rapidly loses its virulence. If an ice-box is thought too cumbersome, a thermopack may be used for carrying unused serum and the virus. It is said they will keep ice cream from melting several hours. Although I have used one, I never checked one with a thermometer. Now these precautions may not be necessary, but I have maintained, why go to the bother of keeping serum and virus cool in the plant, and then have them exposed to all sorts of temperature conditions in the field?

Concerning the effect of freezing on serum and virus, Dr. M. Dorset wrote to me:

> "My opinion is that freezing would not be likely to destroy the activity of the virus . . . . . We have had occasion to freeze hog cholera serum solid and later test its protective properties and were not able to note any ill effects from the freezing."

He did not state how long after the freezing of the serum and virus they were tested, or if repeated or continuous freezing altered them. In practice, I think it would be well not to use serum or virus that had been frozen unless they could be used immediately. An even temperature is the main consideration and the temperature of the container should run from 35 to 55 degrees F. The careful handling of serum and virus impresses the farmer that they are products he has no business handling, which is absolutely true. Besides, the veterinarian is receiving a charge for handling serum and virus and I think he owes it to his client to handle them in the very best manner he knows how.

The part played by the potency of serum and the virulence of

virus cannot be overlooked in considering troubles met in immunization work. Are all brands of serum and virus of the same merit, taking U. S. inspection as a standard? Mohler[14] writes:

> "Again it is stated that 'serum producers have absolutely lost their individuality. They are making serum according to the man who reads about it in a book.' This statement is not in accordance with the facts. It is within the knowledge of the Bureau that practically all manufacturers have certain individual methods in use at their establishments. We do not make an effort to discourage individuality."

Practitioners and owners of live stock owe a great deal of appreciation to the government inspection of serum and virus; but it is well to understand the limitations of its protection. To use them from a company simply because they have passed inspection and to assume that, therefore, the potency and virulence cannot be questioned is a mistake. There are two things U. S. inspection does; namely:—It requires a uniform plan of production which has been shown for years to be successful, which prevents producers from going off on blind roads following notions as regards the general plan of production; second, it installs a careful sanitary police system, which requires cleanliness and sterilization and prevents the introduction of sick animals on the premises. With the veterinarian in charge of production, thereafter, lies the difference in the quality of the products. He is allowed discrimination as to the choice of his hypering virus, the choice of his virus-pigs, the picking of his hyperimmunes, the feeding of his virus-pigs, and he will often exact greater precautions as to contamination and purity of his products than the inspector requires.

Judgment and experience are assets, if he possesses them, and is not hampered in following them.

Personally, I think virus-pigs should not be taken from stockyards, for they should be chosen with care from areas in which cholera does not exist or immunization has not been practiced; that hypering-virus should meet the same requirements that simultaneous virus does; that hyperimmunes should have been immunized at least 90 days and exposed to cholera either by injection or in feed-lots where cholera and other infections have been withstood; that the feeding of virus-pigs will influence their breaking and that they should be fed lightly to secure the most virulent virus. Regarding the test, too much importance must not be placed on it. That it can be tampered with, I am convinced. At best it is a trial on only a few pigs under ideal conditions and the real tests must come in the field.

As regards inspectors, they vary in judgment and ability, and

much must depend on the judgment, ability and conscientious scruples of the veterinarian in charge. Most serum companies are probably doing their best to turn out a product that will meet the approval of use in the field, for after all that is the check. That corners can not be cut, though, is not true. U. S. inspection is a help and guide in serum-and-virus-production, but it is not a guarantee that they are infallible or are even the same in potency or virulence. The practitioner must rely to a certain extent on his confidence in the producer, on investigation into the details of the methods of manufacture, and on results in the field, keeping a record himself.

Finally, the cost of immunization to the farmer is one of the serious contributing factors to the success or failure of immunization. It is evident that if we are to follow the plan I have outlined, the cost must vary with conditions. Contract vaccination should be discouraged. Immunization of little pigs, still suckling immune mothers, or having natal immunity, may be followed by less loss at time of vaccination, but the breaks later on may be increased. It is cheap at the time and that is what the farmer is looking for. Propaganda in the farm papers has led the hog-owner to lose confidence in the veterinarian in many instances and the practitioner who is trying to do his work the way he believes it should be done is charged with being high-priced. Veterinarians themselves have entered into competition, in some instances, to see how cheap vaccination can be made to satisfy the farmer.

If we are to place the immunization of hogs on a purely commercial basis, loose methods of production and administration will be encouraged. Competition may be the life of trade, but in dealing with a contagious disease it is dangerous. An understanding between the hog-owners and veterinarians is essential if confidence is to be restored and the immunization against hog cholera placed on a sound, successful basis. It should be evident also that farmer-vaccination can not be recommended, for the farmer is not qualified by virtue of training and experience to do such work. The things I have pointed out in regard to immunization can not be mastered in ten minutes or learned in a two-day course in a country school house. The veterinarian is essential to the live-stock industry and the live-stock industry is essential to successful farming; so the sooner the farmer and practitioners come to understand each other, the better it will be for everybody concerned.

Summary

1. I do not believe immunization of suckling pigs is safe, as a routine practice.

2. The proper age to vaccinate is after weaning, and when pigs are in good condition.

3. Wormy pigs may be treated for worms at time of immunization, but they should be treated before, if possible, so pigs will be in a thrifty condition.

4. Pigs with ulcerative enteritis should not be vaccinated as a routine practice, but if cholera is suspected, they may be given the double treatment with increased dosage of serum.

5. Pneumonia or swine plague should be considered as often secondary to hog cholera, and cholera should be eliminated as a primary factor.

6. Hogs with flu, if cholera is suspected, or if they are exposed to cholera, may be given the simultaneous treatment, if dosage of serum is increased.

7. Serum-alone treatment in sick herds or individuals should be avoided, unless the simultaneous treatment is administered soon afterwards.

8. A careful technic of administration should be mastered and acquired as a habit by veterinarians.

9. Serum and virus should be handled in the field the same as they are in the laboratory, and a record should be kept of each herd treated.

10. U. S. inspection is a guide to producers, but it is not a guarantee to the user that serum and virus so produced are uniform as to merit.

11. Cost of immunization may influence the character of work done.

Conclusion

I offer these opinions simply as my observations, made, it is true, in a rather desultory manner. More experimental work on immunization is needed and the practitioner welcomes and appreciates greatly any light that may be thrown on his problems in the field. However, such work must meet the exacting requirements of practice to be of the highest value. The practitioner must stick to known, generally accepted methods of immunization. Laboratory experiments should be complete and not fragmentary, and checked by other investigators and well confirmed before being turned over to farmers and practitioners as conclusive.

With other hog diseases to confuse us, we must keep straight on cholera, if we are to avoid or handle troubles met, either following closely or a long time after immunization.

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HOW DOGS WIN THEIR RIBBONS

Are you perfectly familiar with the system of awarding the ribbons in the different classes at dog shows? The following may serve as a guide.

BLUE—Awarded to the winner of a class.

RED—Awarded to second best dog.

YELLOW—Awarded to third dog.

WHITE—Called "Reserve Prize" and given to the dog placing fourth.

PURPLE—Called "Winners" ribbon and awarded to the dog taking first in the winners class. In this class the winners of all other classes compete. Dogs winning purple ribbons alone are given championship points.

PURPLE AND WHITE—Called "Reserve Winners" ribbon and given to the dog taking second place in the winners class. If the dog placed first happens to be disqualified the reserve winner is elevated to winners.

GREEN—Called "Special" ribbon and awarded to dogs winning special prizes of various descriptions, offered separately for the majority of breeds.

COLIBACILLOSIS OF CATS[1]

By H. F. DAILEY

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I have chosen, for several reasons, "Colibacillosis of Cats" as a subject to discuss at this Conference. First, during the past eight years, the small animal department of the Angell Memorial Hospital, of Boston, has handled over 19,000 cat patients. Of this number, about 14% were affected with colibacillosis when entered, and 8% developed this condition while under medical or surgical treatment at the Hospital. These figures alone demonstrate the frequency with which this disease occurs in handling the feline branch of a small animal practice.

Secondly; in the December issue of the JOURNAL OF THE AMERICAN VETERINARY MEDICAL ASSOCAITION, a discussion, following the reading of a paper by Dr. O. V. Brumley, at the 59th annual meeting of the A. V. M. A., on gastro-enteritis in small animals, brought forth this condition, and from the large number of members entering into this discussion I am led to believe that many others in the profession have encountered difficulty with this disease, just as we have, and therefore may welcome a report of our investigations and findings.

Practically no information of value can be secured concerning this condition from literature dealing with diseases of small animals. Most of these works mention this disease under the heading of "Infectious Gastritis," "Infectious Enteritis," or "Croupous Enteritis of Cats." All describe the symptoms and pathological findings, but dismiss the disease abruptly with a statement to the effect that it runs a rapid course, usually terminates fatally, and treatment as a rule is unsatisfactory.

The first, thorough investigation of this disease, from a pathological standpoint, was made by Dr. Karl F. Meyer, at the University of Pennsylvania Veterinary Department, during 1911 and 1912. His findings indicated that a virulent type of the colon bacillus was the causative factor, and from these findings the disease received the name of "colibacillosis," Since that time, moreover, various investigations have borne out this contention.

Working from a purely clinical standpoint, with the patho-

[1]Presented at a Conference of Veterinarians, School of Veterinary Medicine, University of Pennsylvania, Philadelphia, Pa., February 27-28, 1923.

logical findings and symptoms presented as our leads, we spent over two years attempting to combat this condition with most rigid kennel hygiene and all the medicinal agents indicated. Our results during this period were absolutely disastrous. Our next step was to try and produce the disease by artificial and natural inoculation. Here again we met with reverses. Cats kept in an uninfected environment seemed to contract the disease even more readily than cats kept in contaminated cages, and fed on food containing cultures of the colon bacillus isolated from cats dying of this disease, or food mixed with vomitus or feces from affected cats. Results here were negative.

Before proceeding any further with our investigations, we collected all possible data on the activity of the colon bacillus pertaining to human medicine. After carefully studying this collection we were impressed with the fact that many research workers had found very positive evidence that in toxemic conditions terminating fatally, the colon bacillus took advantage of the rapid decrease in the vitality of the host, and invaded the circulation and viscera adjacent to the digestive tract.

Predisposing Factors

With these findings as a lead we started a thorough, daily investigation of all cats in the hospital. We were not long in discovering that confining a cat to a cage in an unaccustomed environment had a rather surprising effect upon the animal's normal functions. Over 40% of the cats, immediately upon being placed in a hospital cage, sought a secluded corner and remained in that place without drinking, eating, urinating or defecating for a period of from 18 to 48 hours. These cats, examined after 24 hours of this inactivity, disclosed a greatly distended bladder and hard masses of feces in the large intestine extending from the caecum to the anus.

Cats requiring a surgical operation were not usually operated upon until the day following their admission to the hospital. Following the operation they would re-enter this period of inactivity and with this period added to the first 24 hours you can readily understand why operative cases are more prone to develop this disease. If these conditions were permitted to continue past the 48th hour period, we noticed that the cats developed a frequently repeated, swallowing motion of the muscles of deglutition. This symptom continued from 12 to 18 hours before actual emesis occurred.

To determine whether the urinary and intestinal stasis shared equally as factors in this condition, we ran through a set of tests, first catheterizing several cats which had retained urine for 36 hours, being careful not to disturb the collection of feces in the large intestine. This urine was tested for acetone and diacetic acid, but was negative. These tests were made to discover the possible presence of acidosis. After the urine had been removed, the majority of these cats continued to present the intestinal stasis and subsequently developed the colibacillosis in true form.

We next took several cats which showed urinary and intestinal stasis after a 36-hour period and carefully emptied the large intestine by enemas. We found that many of these cats urinated during the process, or shortly after. Therefore, we considered the urinary stasis of no further consequence. Following the removal of the collection of feces in the large intestine, many of the cats became active and accepted food with favorable results.

Intestinal Stasis

Working with intestinal stasis as a lead, we took several cats, which were accustomed to cage confinement, and were thriving after two weeks of such confinement. On these cats we tried various diets. First we fed all the milk they would consume for four days. No changes occurred in their condition. After a few days of regular diet, we put them on an exclusive and excessive diet of raw beef. No change occurred. We next used as a diet boiled beef, but the cats ate sparingly and did well. On raw liver the cats did well. On cooked liver two cats out of eight developed colibacillosis, while the remaining six showed some degree of intestinal stasis.

We added two strong recruits to our string, and after six days on a mixed diet, fed a mixture of canned salmon and well-boiled haddock, giving the cats all they would eat, and they ate with relish. After three days on this diet two cats showed symptoms of colibacillosis and at the end of the fifth day five out of the eight had developed it.

We next performed several ante-mortem "autopsies." Placing the cats under chloroform anesthesia, we opened the abdominal cavity and found that a retroperistaltic wave started in the small intestine, 12 to 16 inches from the pyloric opening, and forced small quantities of the contents of the small intestine through the pylorus into the stomach. Thus we were able to account for the bile-stained, alkaline vomitus which occurs in

this condition. Beyond the origin of these retroperistaltic waves the small intestine showed a space of 6 to 8 inches, in which all peristalsis had ceased. The intestine in this area presented a hard, cord-like appearance, pale in color. Beyond this very feeble peristalsis could be detected, proceeding toward the large intestine. Our findings in this instance are borne out by the physiological law governing intestinal peristalsis, to the effect that any condition interfering with the normal function of peristalsis, for example, severe constipation, will cause a reverse action and the development of retroperistalsis.

History

To account for the seemingly epidemic outbreaks of colibacillosis which appear from time to time, affecting cats in certain localities, under normal conditions, we collected detailed histories of such cases, and our findings were as follows; These outbreaks are associated with abnormal, climatic conditions, occurring either during the summer, when such localities are experiencing a period of very rainy or humid weather, or in the winter, during a period of heavy snow-fall. Under either condition cats become very inactive, refuse to go into the open, but continue to accept their normal rations and spend the intervening hours curled up in some comfortable corner. The result produced is an intestinal stasis and an outbreak of colibacillosis. Where several cats in one household are affected at the same time, it can, without exception, be traced to faulty feeding, usually in the form of excess canned salmon, boiled fish or liver.

Therefore we have come to the conclusion that colibacillosis of cats is not an infectious disease, but rather starting with an intestinal stasis which developes into a toxemia, thus lowering the vitality to a point where the colon bacillus takes advantage of existing conditions, and invades the circulation and surrounding tissues.

As factors in the etiology of this condition, we enumerate the following: Placing cats in unaccustomed surroundings, injudicious feeding, abnormal climatic conditions, and intestinal obstructions caused by accumulations of hair or intestinal parasites.

Symptoms

The symptoms presented, in order of appearance, are: A sphinx-like attitude, constipation, repeated, labored, swallowing motions of the muscles of deglutition, and drawn expression about

the eyes. Emesis, first, of particles of undigested food, followed by white, frothy mucus, which gradually changes in color to a yellowish, later a greenish, and finally a greenish-brown. This vomitus frequently contains ascarids which have been forced into the stomach by the retroperistalsis. There is a rapid and very apparent loss of weight, with extreme weakness, and the cat emits a peculiar, high-pitched cry, especially when handled. The animal seeks a cold floor to lie upon, will lie with the head hanging over a dish of water, and as the end approaches, try to get into the dish. This desire frequently leads the cat to sink, bathtub, or pan used for draining a refrigerator, in which they attempt to lie. The fur loses the usual luster, no longer lies smoothly against the body, but stands up, giving the cat a very unkempt and forlorn appearance. The temperature at the onset is slightly elevated, but soon becomes subnormal. After the disease has been in progress for 24 hours a diarrhoea develops, and the stools then consist of a grayish mucus. From here on the cat becomes rapidly weaker, the extremities become cold and the skin has a putty-like feeling. Symptoms of abdominal pain appear, the cat becomes restless, throwing itself first on one side then on the other, stretching the legs apart and unsheathing the claws. As the end approaches we notice marked muscular twitching, especially about the head and neck. A state of coma soon follows, which is of short duration. The course in fatal cases of colibacillosis is usually rapid, two to four days, depending upon the age and vitality of the subject.

Pathological Findings

The most noticeable pathological changes appear in the gastro-intestinal tract. The mucous membrane of the pharynx shows evidence of an acute, inflammatory process. The gastric mucous membrane appears pale in color, swollen, and covered with a tenacious, yellowish mucus. The contents of the intestines vary from a salmon-pink to a grayish-brown, watery mucus. The mucous membrane of the upper third of the small intestine is swollen and pale pink in color. Beyond this, for a distance of 6 to 8 inches, the mucous membrane is light gray and the remaining portion is of a cherry-red color. Peyers' patches appear swollen and red. Areas of petechial hemorrhage appear throughout the whole intestinal tract. The musculature is infiltrated and of a dark red color, the serous covering being greatly thickened. The mesenteric lymph-glands are enlarged and edema-

tous. The liver, spleen and kidneys show evidence of an acute, parenchymatous degeneration.

Treatment

If the cat is under the direct observation of a veterinarian, at the onset of this disease, such as a hospital patient, we have found that the most efficient treatment consists in the immediate administration of $\frac{1}{16}$ grain of arecoline hydrobromide. However, if emesis has occurred for a longer period than eight hours, this treatment is prohibitive, as the rapid lowering of vitality makes the cat susceptible to this drug and he will succumb to its effects.

The next line of treatment consists of high enemas of warm, normal saline solution, followed by the oral administration of two drams of castor oil or four drams of mineral oil. This will usually be retained if the cat is immediately placed in quiet surroundings and left unmolested. If the oil is rejected repeat the dose immediately. Never under any circumstances let the owner carry the cat any distance after the oil has been given or it will be rejected.

If the cat has vomited a large number of ascarids we precede the oil with tenth-grain santonin and calomel tablets, every 15 minutes until five have been given, or a capsule of carbon tetrachloride, 2 minims per pound of cat. Antiemetics are contra-indicated. We have tried them all and find that they are rejected almost immediately. The forced administration of nourishment in any form is fatal. Even after emesis has ceased, for a period of eight or ten hours, forced feeding will prove fatal, as such nourishment is retained in the stomach and after several hours the accumulated amount, from repeatedly-given, small quantities, will be rejected and severe attacks of emesis will follow, terminating fatally.

Administration of Medicine to Cats

At this point I wish to say a few words regarding the administration of medicine to cats. The person giving the medicine is the only one required for this operation. The addition of human units, of from one to a dozen, only adds difficulty in corresponding proportions. Place the cat on a table with a smooth surface. Have the medicine to be given on a convenient corner of this table. Get the confidence of the cat by a few gentle strokes of the hand or scratch it gently about the head and neck with the index finger. Then place the palm of the left hand over the top of the head and press the cheeks gently inward against the upper

premolars, with the index finger and thunb, at the same time raising the head slightly. Watch to see that both front paws are firmly planted on the table. If one paw is raised, lower the head and relax pressure on the cheek.

It is a peculiar fact that cats never strike with a clean sweep of the front paws, but rather accomplish this feat in two phases. The first phase is a warning. The paw is raised to a position where it is in line with the ventral surface of the chest. If the hold on the cat's head is slackened during this phase the cat immediately replaces the paw on the table. This action may have to be repeated two or three times before the cat permits the medicine to be given. The action of the index finger and thumb, pressing the cheeks against the teeth, forces the cat to open the mouth slightly. If the medicine to be given is liquid, pour a thin stream onto the end of the tongue very slowly. Relax your pressure from time to time and permit the cat to swallow. If tablets are to be given, drop them as far back on the tongue as possible and tap the under side of the throat with the index finger of the right hand and the tablet will be swallowed immediately.

To proceed with the treatment. After emesis has ceased for a period of 12 hours, a small amount of warm milk or broth may be offered. Allow this to remain before the cat for 30 minutes. Frequently the cat will lap a small amount. This procedure may be repeated every four hours during the next 16 hours, at the end of which period the cat will become active and move about in search of more substantial food. As a rule, this should consist of lean, raw beef given in small quantities, at five-hour intervals. During the period of convalescence it is often advisable to give a tablet consisting of iron, quinine and strychnine 1-500 grain. If the cat does not show a marked desire for food, we have found that 3 grains of pepsin, given every four hours, will create the desired results. If treatment is started during the first 24 hours of this disease the prognosis is favorable.

VISITORS AT THE JOURNAL OFFICE

Recent visitors at the JOURNAL office include: Drs. Earl Sunderville, of Ithaca, N. Y.; H. F. Leighton, of Pontiac, Mich; E. W. Porter, of Reynoldsburg, Ohio; S. Brenton, E. P. Schaffter, H. H. Sparhawk, John Hoberg, C. E. Turnbull, H. T. Carpenter, E. E. Patterson, Z. Veldhuis and Frank J. Fess, all of Detroit; and Mr. F. V. Hawkins, of Pitman-Moore Co., Indianapolis, Ind.

THE CORPUS LUTEUM[1]

By H. E. KINGMAN,

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The veterinary profession has a just right to be proud of the progress that has been made in the treatment of sterility in cattle. Information regarding this subject has become general and the context so broad that one finds it necessary to confine one's remarks to certain, well-defined phases. Phenomenal results have been obtained through manipulations of the corpus luteum and it is about this body that I propose to speak.

In many respects clinical results have been obtained that may be difficult of accurate explanation. We have resorted frequently to extirpation of the corpus luteum, when there seemed to be nothing else to do and the cow has conceived. This is satisfactory enough, but the practice demands a more thorough understanding of the principles involved.

We are forced to admit that we have worked blindly with our manipulations of the corpus luteum. "The cart has preceded the horse," in many respects, but gradually new light is being thrown upon the subject and through a better understanding we will be able to handle our cases more intelligently and successfully.

It is not necessary to take your time with a dry description of the physical properties of the corpus luteum and the manner in which it is formed. This information may be obtained from any anatomy or physiology. The phase in which we are most interested is relative to its influence upon the healthy and diseased genital tract. It becomes necessary, however, to undertake a general discussion of the theories that attempt to explain the activities of the corpus luteum.

Its active principle is thought to be an autocoid of a simpler chemical formula than some of the other incretions. Further, it may elaborate more than one. Excitatory autocoids are called "hormones" and inhibiting autocoids are known as "chalones." The corpus luteum seems to possess both hormones and chalones. Since we may point directly to stimulating effects, such as growth

[1]Presented at the twenty-ninth mid-year meeting of the Missouri Valley Veterinary Association, St. Joseph, Mo., February 13-14-15, 1923.

of mammary gland, and inhibiting action, such as the anestrum, or absence of "heat."

The corpus luteum may also act in a simple, mechanical way. By inhibiting ovulation, and the functions incident to ovulation, it may act as a foreign body in the ovary. When the corpus luteum is extirpated, the ovary is relieved of its presence, and may then throw into the circulation one or more autocoids of its own production. This theory is probably not true but deserves consideration. Further, we are confused regarding the method by which the results are obtained through the expression of the corpus luteum, since following its extirpation it is dropped into the peritoneal cavity, and from there absorbed into the circulation, acting in the same manner as if it had been injected intravenously. We must not lose sight of the fact that the incretions of the body are closely related, and that the placenta, mammary gland and pituitary body are adjuvants to the corpus luteum.

Experimental Evidence

Let us now consider the evidence regarding the corpus luteum, as obtained from the results of experimentation and the field of practice.

1. The corpus luteum, when injected intravenously, stimulates uterine contractions. (Shafer and Stagaki).

2. It stimulates the growth of the mammary glands and the outpouring of milk, even in the virgin female, when injected subcutaneously. (McLeod).

3. It is responsible for the raised nutrition of the uterus during pregnancy. (Marshall).

4. So long as it remains full-sized and *in situ*, it inhibits ovulation and estrum.

5. If the corpus luteum is pressed out of the ovary, estrum occurs in three to five days, in the cow.

6. Following extirpation of the corpus luteum, the cervix dilates and the uterus contracts. (DeVine).

7. Its absorption from the ovary is not governed by any fixed rule, although normally in the cow it atrophies sufficiently to permit ovulation every 21 days, unless fertilization of the ovum takes place.

8. The factors which cause its retention in non-pregnant cows are not well understood.

9. Its retention permits a period of rest for the uterus.

Perhaps, also, idleness permits accumulation of pus and lowered vitality and resistance on the part of the uterus.

10. It is subject to cystic degeneration.

11. It is subject to hypertrophy.

It is now our problem to correlate this information and make practical application of it.

1st. Through the extirpation of the corpus luteum, ovulation and estrum are produced. We have frequently found cows that had shown no apparent estrum for a period of 6 or 8 months or longer, and have been able to produce it within five days by expressing the corpus luteum. Of all the results obtained from this operation, the production of heat is probably the most phenomenal as well as successful.

2nd. As a result of the contractions of the uterus, produced by the expression of the corpus luteum, the organ may be emptied of its contents, whether the latter be fetus or pus. If one is called upon to produce abortion in the cow, the most satisfactory way is through expression of the corpus luteum. This must be done, however, within the first four or five months of pregnancy, and the earlier the better, after 30 to 60 days of gestation. We may take for example a registered, Jersey heifer that has accidentally been served by a Holstein bull. One should wait 30 to 60 days, to make certain that the heifer has become pregnant, and further to allow the corpus luteum to become well established. It must be carefully handled and completely expressed.

The Treatment of Pyometra

In case of pyometra, the extirpation of the corpus luteum constitutes part of routine treatment. It is first advisable to liberate the pus from the uterus, depending upon the corpus luteum to bring about involution and reparative processes. A new corpus luteum will not be formed until ovulation takes place, along with estrum and menstruation. If recovery has not taken place at this time, the new corpus luteum may be expressed, repeating the flushing and invigorating process of menstruation. This of course is done in conjunction with other forms of treatment, but probably constitutes the most important factor.

The question immediately arises: When are we justified in expressing the corpus luteum and how may we determine whether or not it is abnormal? So far as macroscopic appearance is concerned, we are unable to differentiate between true and

false and retained corpora lutea. It becomes necessary to take into consideration the history of the case. Naturally one should proceed with caution, since the expression of a corpus luteum in the early stages of pregnancy would surely defeat the end toward which the operator is working. So, the diagnosis of pregnancy becomes an important matter.

One would derive little benefit, if any, by destroying the corpus luteum of estrum, since if a sterile cow comes in heat regularly, one must look to some other cause than abnormal corpus luteum. However, if the cow does not come in heat, then one may conclude that the corpus luteum is "persistent," and after making certain that the cow is not pregnant, it may be expressed.

The corpus luteum is subject to cystic degeneration. One may usually detect the presence of a cyst through the walls of the rectum, but they may be so small that palpation would reveal nothing. Dr. Williams assumes a rather unhopeful attitude in regard to cystic corpora lutea in that he believes that they are caused by the infection of the crater left by the ruptured graafian follicles and from which the corpus luteum develops. This infection travels by continuity through the uterus and fallopian tube, and by contiguity to the open crater.

Some would differ from Dr. Williams, however, in regard to the method of handling cystic corpora lutea. While his contention that the cause of sterility may be looked for in the fallopian tubes or uterus is absolutely tenable, it is also true that the extirpation of the corpus luteum brings about a reaction in the entire genital tract that simulates inflammation, increasing the resistance toward invaders through increased phagacytosis and the attraction of antibodies and serum in the uterus.

Menstruation is spoken of as a surgical freshening of the uterus, and estrum is recognized as a period of repair. This to me constitutes the most plausible explanation for the good results that are obtained from the expulsion of the corpus luteum.

The Use of Glandular Extracts

We have not yet learned to use the corpus luteum or placental extracts in veterinary practice, although physicians are using both for a variety of diseases. From the literature on the therapeutic use of these extracts in human practice, the indications are that there is still much to be learned, although rather marvelous results are being realized under the present knowledge. One of the largest firms preparing corpus luteum recommends it

for use in the following conditions: Abortion (threatened and recurring), acne, dysmenorrhea, neurasthenia, orchitis, obesity, ovarian insufficiency, vomiting in pregnancy, prurigo.

Sterility is the cause of enormous loss to stock-raisers and they will greatly appreciate the successful handling of this problem that has for so long a time baffled all efforts toward control. We have only begun our work with the organs of internal secretion. Most of us can remember when alkaloidal therapy made its debut. Endocrinology is now crying for recognition. We are now using the active principles of many of the endocrine glands, including adrenalin, thyroidin and pituitrin, and preparations of the ovary and placenta.

Perhaps we will be using even preparations of the corpus luteum with the same sound intelligence with which we now use adrenalin and pituitrin, but before that time comes there will be many enthusiastic supporters of this and that product, and then the stern old teacher, Experience, will retard the pendulum and start it back toward normalcy and the sane use of endocrines.

The veterinarian is struggling with the subject of sterility and marked progress has been made. We have derived encouraging results from the manipulations of the ovary. Our understanding of the real factors involved is indeed meager. It is to be hoped that we will proceed with caution and make careful, painstaking observations in order that the handling of this subject of sterility may develop to a stage that will be a credit to the profession.

BOY, PAGE DOCTOR HALL

Our United States Government has actually issued letters patent for a tape-worm trap, according to a recent press dispatch. The patentee describes his rather unusual and ingenious contrivance as follows:

"My invention consists of a trap which is baited, attached to a string, and swallowed by the patient after a fast of suitable duration to make the worm hungry.

"The worm seizes the bait and its head is caught in the trap, which is then withdrawn from the patient's stomach by the string which has been left hanging from the mouth, dragging after it the whole length of the worm."

The trap may be made of either gold or platinum, according to the press notice. We might suggest that if it were set with a few diamonds, Mrs. Taenia would undoubtedly be more easily captured.

CLINICAL OBSERVATIONS ON SILAGE POISONING[1]

By J. J. OBERST,

Grafton, Wisconsin

This case report is based upon the writer's experience in treating horses affected with so-called silage poisoning on one farm where there were seven horses, six of which succumbed to the disease. Other names which have been given to this affection are mycotic gastro-enteritis, forage poisoning and botulism.

The silage was a mixture of mature corn and third-growth alfalfa, which had been harvested into the silo during a spell of wet weather. One load of alfalfa was used to about every three or four loads of the corn. Upon inspecting the silage in the concrete silo it was found to be moist and well packed and showed no indication whatever of mold, even around the edges.

When the owner was questioned, he stated that it had been his custom to feed the horses, the first thing in the morning, about one-half peck, or a little more (1 bushel for the 7 head), of silage which had been forked out of the silo the night before. This meant that the silage had been exposed to the air for from 13 to sometimes 15 hours. In the evening the same quantity of silage was fed, after having been uncovered for 7 to 8 hours. Between these feeding-periods alfalfa hay and hominy feed was given. This ration had been fed for a period of about two months without causing digestive disturbances of any kind.

Just at the time the trouble started, the weather was very warm for March, so it may have been responsible for bacterial changes occurring in the exposed silage. At any rate the owner had noticed during this time a misty formation rising and maintaining itself from the top of the silage, to a height of some 18 to 20 inches. When the weather was cold this mist had not been observed.

On March 9th I was called to the farm. Upon arrival, about one-half hour after being called, I found horse Number 1 gasping his last. He was perspiring in patches, eyes turning and twitching in their sockets, heart fluttering at the rate of about 140 per minute. This horse died without the least struggle, within less than two minutes after my arrival. Being wanted at a

[1]Presented before the semi-annual meeting of the Wisconsin Veterinary Medical Assn., Marinette, Wis., July, 1922.

few other places in a hurry, I did not make any inquiry as to feed- and water-supply, and left for the next place.

March 11th a hurry call was received, saying that horse Number 2 was appearing sick, but was still eating. When I arrived one-half hour later, I found the horse perspiring in patches, and trembling so violently that he could not maintain the standing posture, which he tried his best to do. The following symptoms were observed: Pulse intermittent and weak; pupils widely dilated; muco-purulent discharge from right nostril; complete inability to swallow; muscles of deglutition wasted away, the throat appearing as if tightly pinched-in from both sides, down to the upper one-third of the neck. No objectionable odor was noticed in this, nor in case Number 1. Case Number 2 died within 8 hours after the first symptoms had been noticed by the owner.

History and Symptoms

I then inquired into the feed- and water-supply, with the result as stated regarding the feed. The water is obtained from a 65-foot, drilled well, from which the home is also supplied. I immediately suspected the cause to be in the silage, and diagnosed the trouble as forage- or silage-poisoning. I ordered the feeding of silage discontinued immediately. This latter precaution proved superfluous at this time, however, since inspection of the 5 remaining horses showed all of them to be affected, none of them being able to eat and swallow any more. The symptoms which they showed were: Inability to swallow either liquids or solids was almost complete, except in Number 6, which at times seemed to succeed a little. When the tongue was drawn from the mouth, the animal could not retract it again, except Number 6. There was a constant flow of saliva. The animals would grasp the hay with their lips, but could not get it between the teeth. They would keep trying, until the hay became soaked with saliva, when they would drop it and pick up some dry hay. When attempting to masticate, the teeth could not be heard to come in contact with one another. When trying to drink, their lips would pucker a little, but not the slightest movement could be noticed at the throat. The muscles of deglutition rapidly wasted, presenting a pinched-in appearance around the throat and both sides of the upper third of the neck.

A muco-purulent discharge from the right nostril was noticed in every case, being slight at the onset and becoming more

profuse as the malady progressed. The pupils were slightly dilated and non-responsive to light. The animals, however, were attentive to surroundings in the beginning of the attack, but as the disease progressed, the hearing also appeared to become affected. Pulse-rate normal, but lacking tone. Temperature normal to slightly (¼ to ½ of a degree) sub-normal. Tail limp, muscles offering no resistance, so that one could almost fold the tail straight over the back like a rag. When the animals were walked, slight incoordination was noted, especially when being turned around.

The bowels were constipated and auscultation revealed only slight murmurs, and the latter only at irregular intervals. No tympanites was present in any of the cases. When the horses were in a recumbent position, a sharp, heavy needle could be stuck through the coronet without producing a reflex, except in Number 6, which showed slight sensation at this point. The symptoms increased in intensity, the pupils becoming more and more dilated. Weakness increased so that the animals could not maintain a standing position, but would lie quiet for hours at a time. The discharge from the nose increased somewhat, and the odor from mouth became offensive. Coma was at first partial then complete. There was irregularity of the heart, a faint gasp for breath, as the heart gave out, then the end. Six of the seven horses died with symptoms as described, the duration of the attack lasting from 2 to 120 hours from the time the first symptoms were noticed.

Treatment

The treatment attempted was as follows: Cases Numbers 4, 5 and 6 were given an aloetic physic in capsule, which could be seen to go down. Immediately afterward cases 4, 5 and 6 were given, with a long-nozzle dose-syringe (giving not more than 1 oz. at a time and watching for it to go down—a very tedious procedure), the following prescription:

R.	Potassii permanganatis	gr. xv
	Alumini sulphatis	gr. xv
	Aquae	q. s. Oi

About 1 hour later, each received 1 quart of liquid petrolatum administered in the same manner. An hour after this, ½ gr. of arecolin was administered, supplemented by about three gallons of normal, salt solution *per rectum*, in each of the above cases, the object sought being to unload the bowels. However, no results

were secured. Another ½ gr. of arecolin was given two hours later without effect. I ordered botulinus antitoxin (Jen-Sal) and received the latter on the 13th, in the afternoon, and proceeded to inject same in doses of 40 mils, as prescribed. Cases Numbers 4, 5 and 6 were on their feet when the first dose of antitoxin was administered. Number 7 was down, unable to rise, but I gave him a dose. However, he died 8 hours after. Twenty-four hours after this, it was noticed that Numbers 4 and 5 were sinking and becoming more and more comatose, with the urine flowing away involuntarily. I decided not to waste any more of the antitoxin on them.

I then gave Number Six 60-mil doses every 24 hours, for 4 consecutive days, without observing any change in symptoms, although the antitoxin was absorbed very readily and completely. I now commenced the administration of nuclein solution (Abbott) subcutaneously every 4 hours, and after 48 hours of nuclein treatment, the animal seemed to be improved slightly, being able to swallow a little. The reason I used nuclein solution was because of its reputed action upon the white and red blood-corpuscles.

Post-Mortem Lesions

The post-mortem examination revealed the following lesions upon a hurried inspection: Small areas of congestion were observed upon both the large and small intestines, the latter showing black patches under the serous coat, from ½ to ¾ inch in diameter. These were in places only, other portions appearing practically normal. The liver and kidneys were dark, brownish-red in color. Contents of bowels soft. The lungs were dark in places. The pericardial sac contained about 2½ quarts of a reddish-colored liquid, partially gelatinous. Heart-muscle dark, showing a few petechiae similar to those observed in hog cholera. Tongue coated thickly with a greyish, soap-like substance, which when scraped off left the organ clean without evidence of other disease. Particles of food were found lodged in the throat, which together with decomposition of the buccal secretions, I think were responsible for the offensive odor, which is noticed in the later stages of this disease.

Samples of the silage, hominy feed and hay mentioned, as well as of the wheat and oats fed to the poultry on the farm, were forwarded to the Veterinary Science Laboratory, at the University of Wisconsin, for examination. The report received

from the Laboratory stated that attempts to demonstrate the presence of botulinus toxin by inoculating guinea pigs with a filtered extract of some of the silage and by seeding media to detect the presence of the botulinus organism were not successful. This is not at all surprising, as the sample forwarded was secured several days after the horses became affected, so it did not represent the particular lot of silage that made the horses sick.

Other interesting facts, mentioned in the report, were credited to Graham[1] who states that the toxin appears to be developed and elaborated on grain and forage stored in barns or silos, during certain seasons of the year, when temperature and natural conditions are favorable for the growth of the botulinus organism. It further appears that favorable conditions, i. e., anaerobiosis, are created for its growth and development upon animal feeds during the time of storage *en masse* in open fields. Anaerobic conditions naturally provided in storage feed evidently are not essential for the multiplication of botulinus-like organisms, or for toxin production, since growth *in vitro* is accompanied by the characteristic toxin formation under aerobic conditions in association with saprophytic bacteria, yeasts, or molds which may utilize the available oxygen or exert other favorable influences in their symbiotic development. This observation does not exclude the danger of botulinus intoxication from pasture feeding, though it does not establish the relation or occurrence of this disease in grazing animals.

According to Dr. F. B. Hadley, Wisconsin Experiment Station Veterinarian, silage is not a suitable feed for horses for the following reasons: (1) Because it has been shown that *Cl. botulinum* is more likely to occur in silage than in any other animal feed. (2) Because horses are very susceptible to botulinus toxin. (3) Because it is impossible to detect the presence of the toxin by an inspection of the feed, since the latter is not changed in physical appearance and molds have nothing to do with it.

Shelf bottles of cod-liver oil should never be refilled until the bottle has first been thoroughly cleansed and dried. Or, better, buy the product in pint containers and discard them after use.

[1]University of Illinois, Extension Circular number 38, Forage Poisoning, by Robert Graham

POULTRY PROBLEMS[1]

By E. L. STUBBS

Pennsylvania State Bureau of Animal Industry

Veterinarians must realize the importance of the poultry industry, which in value is second only to the dairy industry, so far as livestock is concerned, and which contributes so much to the food supply of so large a number of people. The productivity of the domestic fowl is greater than that of any other species, in proportion to their value. The value of the yearly products of a flock of poultry may be many times the original cost of that flock. Fowls are so often kept as a side issue that they are universally neglected. There is no other form of animal life that suffers more from the ravages of disease than fowls.

The general pathology of birds is not well understood and little is known of their tissue reactions to injury. Their resistance to ordinary wound infections differs strikingly from that of mammals.

The true scientist seeks and accepts truth at whatever cost. The true veterinary scientist sees his largest duty, and in the best sense his largest self-interest, in the prevention of animal diseases. Hence it falls upon veterinarians to take the leadership in anything that has to do with prevention, control and eradication of poultry diseases. Advice concerning sanitation, wholesome feeding and safe breeding is also very essential.

The poultry flock, as well as the dairy herd, or any other branch of agriculture, must be given detailed study and care to be successful. The poultry flock is built on the basis of egg-production, as the dairy herd is built on the basis of milk-production. Production is gotten by body capacity, because body capacity is necessary to accomodate reproductive organs, and egg production is necessarily a reproductive function.

Health is a fundamental necessity because only the healthy reproduce satisfactorily and profitably. Healthy birds must be started right and kept growing from the time hatched until maturity. Investigation of unhealthy birds very often traces back to a period of unthriftiness at some time.

In preventing disease, as well as maintaining the health of the flock, well-drained soil is necessary, so that the presence of mud

[1]Presented at the fortieth annual meeting of the Pennsylvania State Veterinary Medical Association, Harrisburg, Pa., Jan. 23 and 24, 1923.

and moisture is lessened. A wet soil favors parasites. The continued use of a given area of soil for poultry, year after year, results in its becoming heavily infested with the eggs of various parasites and disease-producing organisms, consequently a greater source of danger to each succeeding generation. Therefore it is highly desirable that chickens be not kept on the same soil year after year.

The frequency with which poultry houses must be cleaned and disinfected should be borne in mind, when they are being constructed. Anything that will interfere with the free access of a man to any part of the house, should be avoided, because it will interfere with routine cleaning. The habit displayed by mites, of collecting in cracks and crevices, should be recognized, by providing buildings with a minimum of such places where vermin may collect. Nest boxes, perches and similar fittings should not be permanently attached, so that they can be easily cleaned. Certain details of construction will at least constitute impediments to the dissemination of parasites and infective material from bird to bird.

Chickens are very susceptible to dampness and draughts. Sanitary houses must be well ventilated and should be arranged so that sunlight penetrates to all parts. Moisture of three kinds must be considered; atmospheric and condensation, which can be controlled by ventilation, and soil, which can be controlled by a proper floor. If poultry houses are well ventilated and dry, the cold does not bother the fowls.

Proper and palatable rations are necessary for the maintenance of health and for the requirements of high production. Improper rations have a bad effect upon a bird just the same as upon an animal, and may lower vitality enough, to be a contributing factor in disease. Investigation of diseased fowls shows a large number affected with an inflammation of the intestinal tract and we cannot help but feel that feeding conditions are responsible for much disease.

Prevention of disease is absolutely necessary because once disease becomes established it is very difficult to handle and often puts the poultryman out of business, or at least stops the profits. Where disease does break out and measures for treatment are undertaken, it is very unsatisfactory, because of the very nature of the problem. In treating other animals, the unit of treatment is the individual, while in treating poultry, the unit is usually the flock, and measures must be taken to treat the entire flock.

In a flock, say of one hundred birds, the procedure is usually to mix one hundred times the amount of medicine for one bird with the food or water. It is clear that this is a very crude method of medication, because some of the birds will get little or none and others will get more than their share. Moreover it will be the sick birds, whose vigor has been destroyed, and whose appetite is gone, that will get little or none of the remedy, yet they are the ones most in need of it.

Proper husbandry will probably do more to prevent disease than anything else. Next to proper husbandry a knowledge of the cause and transmission of common poultry diseases is necessary. Chicken-pox and roup are both diseases of the head, but one is due to a specific cause while the other is due to improper husbandry.

Rapidly fatal diseases such as botulism, so called "limberneck" and coccidiosis, are intestinal infections, feeding infections, and can be prevented by not allowing access to infected material. In the case of "limberneck," elimination from the food of any material likely to contain the toxin of *Cl. botulinum*, such as spoiled canned goods or decomposing animal or vegetable matter. In the case of coccidiosis, keep the young chickens away from infested places. In our work at the laboratory we are finding a large number of chickens heavily infested with parasites, mostly roundworms and tapeworms. Infested birds and infested premises are the greatest sources of danger in the transmission of parasites.

The efficiency of the poultry house and surroundings as a healthy place in which to keep poultry is measured by the percentage of birds diseased. The efficiency of the fowls in the flock as a whole is measured by their natural powers of resistance to disease and of their natural strength, vitality and vigor. Until the poultryman realizes that he must start in the first place with healthy birds and must use every endeavor to keep them healthy, disease will be a constant menace.

The progressive veterinarian can well be surprised at the interest which the live stock owner and the public is giving the poultry industry. Those who have prepared themselves to render a service to poultry owners will readily testify that poultry practice offers a field of unlimited possibilities from a financial standpoint as well as from satisfaction of work performed for economic good.

The farm flock during the past year has been one of the few farming operations which has given a return above the investment. Pure-bred flocks are becoming quite common and birds of high value are often found. More effort is being spent on poultry and greater care is being given all kinds of poultry. When a practitioner demonstrates his ability to give advice concerning poultry, he renders a service which is appreciated by all members of the family and one from which he can likely get more free advertising of a favorable kind than from any other line of work.

Many veterinarians do not feel capable of rendering a service in poultry work, and are reluctant to accept calls. Yet if we stop to think, we will well realize that veterinarians are trained in the knowledge of disease and in methods of handling disease, so that we are better qualified to render such a service than anyone else. Furthermore when a veterinarian starts practice, he accepts the responsibility of treating disease, and it is his duty to respond to calls and use every effort to do the best he possibly can.

In conclusion, let us remember the following points:

We must realize the magnitude, the productiveness and usefulness of the poultry industry.

The susceptibility of poultry to disease makes disease a constant menace.

The poultry industry is built on the basis of egg-production, which is necessarily a reproductive function, and only the healthy reproduce satisfactorily and profitably.

Careful and proper husbandry will do more to prevent disease than anything else and is also essential in controlling or eradicating disease.

Prevention of disease is better than treatment, which of necessity becomes a flock proposition, hence a crude method and not so satisfactory as treatment of other animals, where the individual is the unit.

Poultry practice offers a field of unlimited possibilities, financially as well as from an economic standpoint.

Service in poultry problems is appreciated by the public as well as the poultry owner.

Veterinarians should accept the leadership in anything which

has to do with the prevention, control and eradication of disease in this rapidly growing industry.

Every veterinarian owes it to himself and to his profession, so that he can accept his responsibilities and opportunities, as well as to the public whose influence and confidence he must have, to become acquainted with poultry problems, in order that a service can be rendered to this important industry.

GLANDERS

The eradication of glanders from these islands is within easy reach, if not yet fully accomplished. Probably for more than a thousand years this disease has been with us, perhaps introduced by the Romans, but thanks to the discovery of mallein and its diagnostic use by two Russian veterinary surgeons, the last of it is in sight.

In 1907, when a new Glanders Order was introduced but did not take effect until January 1, 1908, there were fewer than 854 outbreaks, affecting 1,921 horses, in Great Britain.

During 1922 only four outbreaks were recorded.

CANINE PYORRHOEA AND SANITATION

Every dog kept as a household pet or companion, fed on soft food more than once in 24 hours and not given an opportunity to use his teeth, by the time he arrives at middle age, is the subject of pyorrhoea, so much so that in the majority of cases the pockets around his teeth are nothing more than so many miniature cesspools. To the bearers they often occasion gastric and other troubles, and to the inmates of the household, if they are not injurious, they must be very objectionable.

The trouble is never seen, even in very old dogs, that have been forced to use their teeth for reducing their food or in hunting rabbits and rats.—Henry Gray, M. R. C. V. S., *in Veterinary Notes, Journal of State Medicine (London).*

PARASITIC INFESTATION OF DOGS BEFORE BIRTH[1]

J. E. SHILLINGER, *Biochemic Division, and* E. B. CRAM, *Zoological Division, Bureau of Animal Industry, U. S. Department of Agriculture.*

Prenatal infestation with parasitic worms has been reported in a considerable number of cases and these cases involve parasites belonging to such dissimilar groups as the Nematoda, Cestoda and Trematoda.

With regard to flukes, intrauterine infestation has been reported by Fujinami and Nakamura (1911) for *Schistosomum japonicum* in dogs and by Narabayashi (1914) for the same parasite in the dog, guinea pig and human infant, in the last case the eggs of the parasite having been found in the feces of 3 of 22 new-born infants in Japan.

Similar cases of hydatid infestation in young infants have been reported by several writers: Cruveilhier reported a hydatid cyst in the liver of a child 12 days old; Heyfelder, 44 hydatids of the placenta and umbilical cord of a 7 months fetus; Hemmer, a cyst in the abdomen of a new-born child. However, concerning these and other similar reports, Dévé (1918) expresses doubt and thinks them probably *not* Echinococcus cysts but fetal malformations.

With regard to nematodes, Howard (1917) found hookworm eggs in the feces of a child 14 days old, in British Guiana; Adler and Clark (1922) found *Ancylostoma caninum* in 6 out of 13 dogs 2 to 15 days old; Ackert and Payne (1923) found mature *Necator suillus* in 7 pigs 26 days old, and since at least six weeks is necessary for the development of mature worms of this species after infection, these are undoubtedly cases of prenatal infection. Neveu-Lemaire (1921) found the sheep lungworm, *Dictyocaulus filaria* in a 4 days old lamb and in a lamb fetus. Large numbers of mature ascarids were found by Macfie (1922) in a 3 weeks old calf, and by Griffiths (1922) in calves dying the tenth to fourteenth day after birth. Fülleborn (1921) produced prenatal infestation of pups by injecting under the skin of a pregnant bitch thousands of *Belascaris* larvae obtained from the liver of a guinea pig which had been fed eggs of these worms.

The present experiment was carried out as an attempt to throw

[1]Contribution from the Zoological Division, Bureau of Animal Industry, U. S. Department of Agriculture.

some light on the many cases met with in veterinary practice of *Belascaris* infestation of very young pups. It differed from Fülleborn's experiment in the method of inoculation of the bitch, as we endeavored in this case to produce the infestation in a manner as nearly as possible like that occurring under natural conditions, i. e., by the ingestion of infective eggs. In our work seven mature female ascarids of the species *Belascaris marginata* were procured post mortem from the intestines of two dogs. The gravid uteri of these worms were dissected out and the eggs removed and kept in a two per cent formalin solution at ordinary room temperature for a week. Examination of the eggs at this time showed them to contain live larvae. The next day a quantity of the fluid containing many eggs was administered orally to a bitch in advanced pregnancy. Two days later another supply was given. Eight days after the first feeding 12 puppies were born, 8 being dead at birth or dying shortly afterward, and the remaining 4 dying the following day. All appeared well developed and showed no apparent abnormality. Pressed sections were prepared of the fresh tissue of the liver, spleen, kidneys and lungs of the pups. Eight of the 12 pups showed infestation with larval *Belascaris*, 6 having them in the liver only, 1 in the lungs only, and 1 in both liver and lungs. All of the larvae found were between 900 and 950 microns in length.

While examination did not show any in the enteric canal, the position and stage of development of those found in the other parts of the body account for the mature worms reported by various writers from very young animals.

That the larvae undoubtedly reached the placenta through the maternal blood stream is shown by previous investigations in the migration of this and of related species. Ransom and Cram (1921) traced the migration of *Ascaris lumbricoides* and found the blood stream to be the principal route. Ransom and Foster (1920) obtained *Belascaris marginata* from the lungs of a rat to which they had fed the eggs. Fülleborn (1921) has found a wide distribution of *Belascaris* larvae throughout the body of dogs, encysted larvae being found in liver, kidney, muscles and brain. It is to be expected that their method of migration is similar to that of *Ascaris lumbricoides*.

It is difficult to judge what part the heavy *Belascaris* infestation played in the still births and the deaths soon after birth, as certain physical surroundings (weather, etc.) were unfavorable to young life at that time. It seems quite probable, however,

that the infestation may have been a factor in this case. It is evident that all of the larvae found were present as a result of the feeding of the embryonated eggs, as the bitch used in this experiment (dog 424 of Hall and Shillinger, 1923) had been given huge doses of an anthelmintic (240 cc and 320 cc of carbon tetrachlorid) about 11 months previously, and had been kept for observation on a cement floor free from contamination since that time. This animal died 16 days after the first feeding of ascarid eggs and 8 days after giving birth to the pups. Post-mortem examination showed no worms in the intestine but encysted larvae were found on the exterior of the right side of the heart and in the lungs. These larvae were apparently dead and had not developed as had those in the pups, being only 300 to 360 microns in length.

This work confirms Fülleborn's findings as to the possibility of prenatal infestation with *Belascaris marginata*, and establishes the fact that following ingestion of infective *Belascaris* eggs by pregnant animals, the larvae in the course of their migration may cross the placenta and enter the young in utero.

The results obtained may help to explain the high infant mortality in dog life and be of practical value in developing prophylactic measures for the control of these worms. It is evident that the protection of pregnant dogs from ascarids is a measure of importance in protecting pups from infestation with these worms. This fact has received little or no attention heretofore.

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VETERINARIANS OPPOSE LEGISLATION

Among the Michigan Veterinarians who were at the hearing on the Farmer Vaccination Bill, before the House Agricultural Committee of the Michigan Legislature, at Lansing, April 4, 1923, were the following: Drs. W. N. Armstrong (Ont. '94), of Concord; F. M. Blatchford (Ont. '93), of Brighton; A. B. Curtice (Ont. '11), of Hillsdale; H. M. Gohn (Ont. '93), of St. Johns; E. T. Hallman (Ala. P. I. '10), of East Lansing; A. McKercher (Ont. '93), of Lansing; R. A. Runnells (Mich.'94), of East Lansing; E. B. Cavell (Ont. '06), of Northville; Judson Black (Ont. '94), of Lansing; J. E. Wurm (Ont. '02), of Pigeon; representing the Michigan State Veterinary Medical Association; B. J. Killham (McK '12), representing the State Department of Agriculture; F. W. Chamberlain (Corn. '06), representing the Veterinary Division of the Michigan Agriculture College; and H. Preston Hoskins (U. P. '10), representing the American Veterinary Medical Association.

A PRELIMINARY REPORT ON SOME WORK DONE WITH A DIPLOBACILLUS ISOLATED FROM FOUR CASES OF PERIODIC OPHTHALMIA IN HORSES

By G. E. JORGENSON

Clermont, Iowa

Inasmuch as the etiology of periodic ophthalmia in horses has not been definitely established, a preliminary report of the findings of the present writer may be of sufficient interest to merit publication.

Over a period of six years, seventeen cases of periodic ophthalmia have been presented for treatment. Inasmuch as this abstract has for its purpose the discussion of the etiology and structural changes only, the treatment will be omitted. In only four cases out of the seventeen was anything definite found. The bacteriological findings in all four cases being identical, the description following will be general in character and include all four instances, without tabulation of the findings in each individual case.

Smears from swabbings and intracorneal aspirations showed the presence of a short, thick, rod-shaped, Gram-negative, non-motile, non-sporogenous, non-encapsulated organism, occurring in pairs as well as singly. Attempts at culturing were successful only in media containing blood or serum. On solidified blood-serum there appeared, after twenty-four to thirty-six hours, small indentations due to liquefaction of the medium. Later the medium was more or less completely liquified. The organism presented the biological features of the Morax-Axenfeld bacillus and was differentiated from the other members of the paratrophic or hemoglobinophilic group.

It was not possible to obtain an animal of the equine genus for experimental purposes here, hence no data are at hand regarding the pathogenicity of this organism toward the horse. Instillations of a pure culture into the eyes of a calf gave negative results. Four rabbits each received 0.5 cc of a pure culture intracorneally. Three showed no lesions whatever after six days. One developed an acute keratitis and iritis, taking on more of the characteristics of a panophthalmitis as the condition progressed. Examination of the eye of this rabbit, after hardening, imbedding and sectioning, showed the usual retrograde

changes common in acute, infectious inflammations. The organism was demonstrated in the lymph spaces of the cornea, in the canal of Schlemm, and in the papillary body, but could not be demonstrated in sections of the outer coats of the eye, the lens or conjunctiva. Numerous organisms were found in the aqueous humor in combination with leucocytes and fibrin.

In the most recent and fourth case in a horse, opportunity was given for studying the lesion in the eye of this animal, inasmuch as the owner destroyed the animal after the second attack appeared. Sections of the eye showed to a great extent a set of lesions similar to those seen in the rabbit. There was considerable infiltration of the cornea with leucocytes and fibroblasts. No organisms were found in the cornea. Sections of the iris, papillary body and tunica vasculosa (choroid) showed as intense hemorrhagic infiltration, with considerable fibrin present. Retrograde changes were present in stages from fatty and granular degeneration to necrosis.

No organisms could be found in these sections. Sections of the conjunctiva and tunica sclerotica showed a similar picture as did the choroid coat. Only in the aqueous humor could the organisms be readily found. No sections were made of the lens and inasmuch as the writer does not consider himself familiar enough with the normal histology of the retina to recognize lesions there, unless they were of the most prominent form, and such being not present, nothing can be said regarding the retina.

It was observed that in the leucocyte infiltration, both in the rabbit and the horse studied, there was a preponderance of polymorphonuclear and mononuclear leucocytes, with perhaps greater numbers of the mononuclear type than the polynuclears. Another peculiar feature noted was the absence of organisms in sections of the eye of the horse, while they were present in some of the sections of the eye of the rabbit.

Summary

In four out of the seventeen cases of periodic ophthalmia in horses, an organism showing the cultural and morphological characteristics of the Morax-Axenfeld organism was isolated. No attempts were made to produce the disease artificially in horses, but in one rabbit out of four receiving intracorneal injections of pure cultures of the organism isolated from equine cases, there developed an acute kerato-iritis, progressing later into a general panophthalmitis. Instillations into the eye of a

calf gave negative results. Study of the retrograde changes in this disease showed the usual structural changes common to infectious inflammations.

Conclusions

The work here has been entirely too limited in its scope to permit one to arrive at a safe conclusion. It is obvious, however, that the presence of this organism may be of sufficient significance to merit further study. Although Morax, in his communication, claims that the bacillus described by him was non-pathogenic to animals, sufficient evidence is at hand to show that it is.

References:

Buchanan's Bacteriology.
Delafield and Prudden's Pathology.
Jordan's Bacteriology.
Zeigler's General Pathology.
DeSchweinitz' Diseases of the Eye.
Morax. Ann. Past. Instit.

FROM CZECHOSLOVAKIA

Dr. Bohnslav Sykora, of Prague, Czechoslovakia, a graduate of the Veterinary College in Vienna, Austria, with the class of 1915, is spending three weeks in the Department of Veterinary Science of the University of Wisconsin. He is studying under a fellowship grant from the International Health Board which is largely financed by the Rockefeller Foundation. Dr. Sykora is preparing himself to fill a position in the Ministry of Health in Czechoslovakia in connection with the control and inspection of food products, particularly those derived from farm animals.

According to Dr. Sykora, his country is at present in much better circumstances than any in Europe. This is shown by her being the first to repay the war loan from the United States, and is accounted for from the fact that agriculture is highly developed and prosperous. Czechoslovakia has wonderfully fertile soil and raises enough agricultural products to support the population. The chief exports of the country are: sugar, Bohemian glass, coal and iron. Another noteworthy fact is that less than one-half of one per cent of the population is illiterate. This augurs well for the future of this new republic that has been modeled very closely after ours.

WHY THIS APPARENT INERTIA IN OUR PROFESSION?

By A. A. MOTLEY, *Alpena, Mich.*

Human medicine today is enjoying the greatest success in its history. Veterinary medicine is at the lowest mark. These facts must be obvious to even the slightest observer, and naturally the question arises, WHY?

Many theories have been advanced, chief among these as to the cause of veterinary medicine's decline, has been the automobile, while others blame the passing of the private school, interference of the State Department, county agents, pharmaceutical houses selling to the laity, and every other element that some individual seems to think has interfered with his particular problem, and each one, I have noticed, treats the case as it applies to him, when it seems to me that we should think of the profession as a whole and each man try to recognize what a small part one individual is generally able to play, either in its success or failure.

Having been in active practice for over twenty years and for eleven years of that time in a city of fifty thousand, the first years during which an automobile was a curiosity and the driving horse was "king," I feel somewhat competent to judge what harm the automobile has done to the veterinary profession, and after considering the question from many angles, I recognize the automobile as a friend to our profession, a very good friend in fact, and not an enemy as so many seem to think. Neither do I recognize any of the other causes mentioned above as being great factors in the cause of the decline in veterinary practice.

There are dozens of fields open to the veterinarian today that were not considered twenty years ago, some of them easier and more profitable to handle than horse practice was. One thing that was lost with the driving horse was the advertising the veterinarian got through people who were always around horses and therefore became familiar with the veterinarian's work. Today boys are growing up in the cities under a different atmosphere, around some garage or "engineer for a Lizzie." Many boys and their families own animals of different kinds and have work for the veterinarian, but think, in some cases, that the profession has gone out of business.

I consider the veterinary profession as a whole does not

receive half enough publicity and as a result the public is becoming ignorant of the large field of service covered by veterinary medicine. Do not misunderstand me, I do not mean that each individual practitioner should start an advertising campaign in his community by printed ads., etc., as this would, in my opinion, be of little value. It is a problem of the veterinary profession as a whole, speaking through their schools, state and national societies, Bureau of Animal Industry, state and city veterinary officials, etc. There must be a mutual friendship and understanding between the county agricultural agent and the veterinary profession, as the county agent can and should be made one of the best advertising mediums the veterinary profession can have. The county agent as a whole is rendering good service and they are here to stay. The fact that their work, in some instances, seems to run parallel to ours is the very best reason why our profession should cooperate in place of quarreling.

Our A. V. M. A. should do some work at each annual meeting that would be of national interest to the public and have it broadcasted through the press to the end that the public may know what the profession is trying to do for the public welfare and by so doing, enlighten the people as to the many different kinds of service our profession is able to render. More money must be expended in research work and the result made known to the public. We should always be mindful that our popularity and financial compensation, in fact, our very existence as a profession, will be determined in proportion to our ability to serve. There is little possibility today for a business or profession to grow and prosper unless it is receiving constant publicity as to the services they are rendering.

The profession of human medicine is at its height today, due to the publicity it is receiving in regards as to what it can do. In my home city, a city of fifteen thousand population, school nurses, visiting and county nurses, are all educating the public as to the possibilities of medical and dental service, and besides, they have free clinics for tuberculosis, crippled children, babies, etc., and all of these have been leading factors in placing human medicine where it stands today, besides the untold good these agencies are doing the people by educating them as to when they should have medical aid.

You would be surprised to learn, if you were to inquire of your friends, how few people know that it is a veterinarian who

inspects the meat in our large packing houses. What a wonderful opportunity lost, to keep the profession before the public! What a help if the inspector's stamp gave his initials, the words, "Inspected" and "Veterinarian." Many times I have noticed an article in the press by some state official, a member of our profession, and signed by him, but failing to make it known what his profession is. Of course, members of the profession may recognize him by his signature, but the general public never knows that the profession played any part in the work he is talking about.

Too much cannot be said of veterinarians in private practice taking active part in civic affairs, as members of Rotary Clubs, Boards of Commerce, Agriculture Societies, etc. Every professional man is his profession's representative in his community and that community seldom judges a profession any better than its local representatives.

Individual advertising such as advertising that you vaccinate hogs, etc., is of little value. The profession as a whole must be advertised by giving publicity to its advancements. Then the individual practitioner need not worry. If he is competent, he will receive his full share of the public's confidence and business.

Pouring from the back of stock bottles prevents staining of the labels.

Chloroform is superior to alcohol for powdering camphor. Less of it is required and it evaporates faster.

Corks may be rendered impervious to extremely volatile liquids by soaking them in a 2½-percent solution of gelatin containing 5 percent of glycerin, then dipping in a solution of tannic acid.

The teacher in the primary department of a Philadelphia school had been talking for some time about the three grand divisions of nature—the animal, the vegetable, and the mineral. When she had finished she put the question: "Who can tell me what the highest form of animal life is?" The pupil nearest her hastened to supply the answer as follows: "The giraffe."—*Rural Zip.*

FARM PRODUCTS SHOW DEMONSTRATES A DEMAND THE VETERINARY PROFESSION MUST MEET

By JOHN H. WINSTANLEY, H. A. MILO *and* W. J. MARTIN,
Pennsylvania Bureau of Animal Industry.

The exhibition by the Bureau of Animal Industry of the Pennsylvania Department of Agriculture, of specimens of transmissible diseases of live stock and poultry throughout the State, serves as an educational measure to all and a means of correcting false impressions. It demonstrates to live stock owners and poultrymen the large number of destructive, transmissible diseases which may devastate or depreciate the value of their herds and flocks. Specimens exhibited and demonstrations at county fairs have always attracted a large number of persons interested in live stock from the producers' standpoint. Smaller county fairs depend on this exhibit as a special outstanding feature.

The transmissible diseases affecting poultry never were so well demonstrated in Pennsylvania as they were at the Farm Products Show, at Harrisburg, during the week of January 21, 1923. Besides pathological specimens of transmissible diseases, parasites and the tuberculin reaction in chickens were exhibited each day of the show. The reactions were supplemented by the display of tuberculous lesions in freshly-killed, tuberculous chickens. Large crowds gathered around these specimens, indicating a keen interest of poultry producers in the transmissible diseases with which poultry may become infected. This should awaken in the veterinary profession the necessity of more interest and a more extended study of poultry diseases.

The magnitude of the poultry industry can be estimated from the following:

The 1919 census shows that the value of the annual production of chickens and eggs in the United States is $1,047,989,919. Pennsylvania ranks fifth in the value of chickens and eggs produced in United States; the five leading states, including Pennsylvania, produce approximately one-fourth, having a value of $250,000,000; Pennsylvania and the six bordering states produce one-fifth, having a value of $200,000,000.

The veterinarian *must* become more interested in poultry problems. It was quite apparent from questions asked at the

Farm Products Show that poultrymen want service from those who understand the essential nature of diseases and the body changes caused by them. Already inroads into the poultry-disease problems, which the veterinary profession is best qualified to handle, have been made by feed and drug companies and other agencies which have readily responded to the poultryman's call. Poultrymen should not be compelled to seek help with reference to disease from other than those who are properly trained and qualified to give proper advice.

Some veterinarians who have become successful in giving advice on the various diseases of poultry attribute their success to careful post-mortem examinations, usually performed in their offices; a knowledge of the most common causative agencies of poultry diseases, and an understanding of the economic importance of the most serious and frequent group of diseases which may affect the flock. One who is informed on the diseases of poultry gradually creeps into the hearts of the farm family.

Every successful business is dependent to a large degree upon the advice of specialists. There is rightfully a proportionate share of the money, incidental to such a productive business as the poultry industry, due the veterinarian provided he is qualified to give the proper kind of advice, which in turn will justify him in receiving it. Furthermore this advice whould leave a larger percentage of profit to the poultry owner. The monetary returns to feed and drug concerns interested in poultry must be large, as they make an elaborate display of their products at most county fairs and agricultural exhibits, in order to bring these products before the poultrymen.

Poultrymen are aware that success in the industry is largely due to close observation of the flocks, sanitary measures and the prevention of disease. The local veterinarian who is always more or less in close touch with the owners and breeders of poultry and their flocks, is in a position to give the kind of advice needed in the prevention and treatment of diseases. He should become interested in poultry problems and save poultrymen from the expenditure of considerable sums of money in the purchase of proprietary remedies and useless products. He should direct his client in the purchase of things beneficial and having a tendency toward an economical production.

CASTOR POMICE POISONING

By S. R. JOHNSON,
Bureau of Laboratories, Michigan Department of Health

In presenting this subject it is not the writer's intention to discredit or condemn castor-oil pomice as a feed, but to bring before the profession some of the symptoms, anatomical changes, and tests for the presence of the toxic principle, ricin. In addition it might be well to call attention to the danger of feeding such feed before determining if the toxic principle has been destroyed.

Poisoning and death due to ricin, the toxalbumin of the castor-oil bean, was encountered among some sheep to which the castor-oil-bean pomice (castor bean after the oil has been removed) was being fed.

Castor pomice is often used as a feed and is considered to be a fair substitute for some of the oil meals, as it has a laxative action and contains some nutrient material. The pomice is obtained from the bean after the castor oil has been expressed by the cold press method. This removes only the oil, leaving the toxalbumin in the pomice. This poisonous substance may be destroyed by heating to a boiling point from one to two hours. Drying and exposure to the air for six to eight hours is thought to be sufficient, but it has been my experience that this is not very certain, for unless the pomice is spread out very thin the action of the air will not destroy the toxin.

A sample of pomice over a year old, which has been held in a cardboard box, perfectly dry, still remains toxic to laboratory animals when fed to them in small quantities or a saline extract injected subcutaneously.

Symptoms which develop during a case of ricin poisoning are weakness, vomiting, retching, bloody diarrhea, and impaired vision. Death is caused by the destruction of the erythrocytes and general toxic effect.

Behring states that it is possible to produce an antitoxin against the ricin toxin and experimental animals may be immunized against the toxalbumin by feeding small amounts of the castor-oil bean. Immunity may be produced by repeated injections of small amounts of ricin subcutaneously. The amount to be fed must be regulated according to the amount of the

toxalbumin present in the pomice. It has been found that 0.2 cc of a saline extract made from a sample of pomice, and injected subcutaneously into a full grown rabbit, will cause death in less than 24 hours. This toxic principle would appear to be cumulative from feeding experiments conducted with rabbits as test animals.

In animals dead from ricin poisoning, the appearance of hemorrhagic gastro-enteritis, ulcers in the stomach and intestines, nephritis of the diffuse type, and in general an engorgment of all blood vessels, firm clotting of the blood, marked congestion of the lungs and, in some cases, edema have been present.

The toxalbumin may be detected serologically by the production of an antiserum. The precipitation test and the complement fixation test have proved to be very delicate for detecting the presence of ricin. Hemagglutination tests are also very delicate, but ordinary bean meal may give the same test, therefore it is not specific. The agglutination and conglutination tests are very sensitive, but are non-specific, as they also give positive results with bean meal.* Using the serological tests as a means of detecting ricin has met with similar results, in our hands, with the possible exception of the precipitation test which we found to be somewhat non-specific with bean meal, also that normal serum may be precipitated with a saline extract of castor pomice.

Conclusion

It would seem that castor pomice is highly toxic for animals and should be fed only when it has been definitely determined that the toxalbumin has been destroyed. Boiling or dry heat and exposure to the air will destroy the toxin. Boiling has been found to give the more certain results. Castor pomice may be tested for the presence of the toxalbumin by injecting a rabbit with 0.5 cc of a saline extract of the suspected feed. The use of the complement fixation test or other serological test, if properly controlled, will aid in determining the presence or absence of the toxalbumin.

*Pfeiler and Engelhardt. Landu. Jahrb., 53. 1919.

STANDARD VETERINARY LITERATURE

By W. L. WILLIAMS, *Ithaca, N. Y.*

Standard Veterinary Literature may be defined as the systematic arrangement and consideration of recorded veterinary knowledge. It is not a fixed entity, but is undergoing constant development as new facts are brought to light. Such modifications are constructive and do not disturb the foundation.

The systematic study of standard veterinary literature constitutes the vital basis for progress in veterinary science. The veterinary profession is now passing through an important crisis, as is evidenced by an alarming decrease in the numbers of veterinary students, by the many desertions from the profession and by other signs. Various reasons have been advanced for this disturbing state. Among these, the part played by the disregard for standard veterinary literature has received little or no attention.

American veterinary schools have largely instructed students by means of lectures, without impressing upon them the vital importance of seriously and constantly studying and consulting standard treatises. Anatomy has perhaps suffered least, because it has been regarded from the first as a laboratory subject, requiring a definite text as a guide. In other subjects standard literature has been quite largely ignored. The teacher, by depending wholly upon lectures, whether it be intentional or unintentional, leaves the impression with the student that in his subject there are no worth-while treatises. This has applied especially to the so-called *practical* subjects. They might better be designated the *terminal* subjects, for after all the ultimate aim of anatomy, physiology, bacteriology, pathology ahd the rest are designed to enable the student to secure such an understanding of the science that he may be able to prevent, cure or alleviate disease. A large part of the study of veterinary science is foundation-building for an understanding of medicine, surgery and obstetrics. Perhaps the extreme example of disregard for standard veterinary literature is in the domain of obstetrics, with the inseparable problem of diseases of the genital organs.

In the past the most populous veterinary colleges have been in great cities. In these the instruction, or alleged instruction, has been largely limited to lectures by men who had had no

experience in most of the fields they were supposed to illuminate. They knew something of the diseases and accidents of city work-horses, and of dogs and cats, but while these continue as subjects of importance, others now quite overshadow them. One of the most acute problems in veterinary science today is the control of diseases of the genital organs which interfere with reproduction. The majority of veterinarians in practice learned their obstetrics and genital diseases from lectures by men whose experience in this field was limited to geldings. It is certainly very largely due to this fact that genital diseases of animals is today the basis of the most colossal and disgraceful demagogery and fraud in the history of veterinary science.

American veterinary education inherited from Great Britain the misconception that the *theory* of veterinary science should be taught in the school (by a theorist?) and the *practical* part, during college vacation, by a practitioner. If the college had 100 students they had their *theoretical* instruction by a small group of men unable to teach the terminal subjects properly and they were then turned over to 100 nondescript, irresponsible practitioners who were not generally teachers in any true sense, and from these they were expected to get efficient teaching. Consequently nobody was responsible, and no vigorous regard was kindled for standard veterinary literature. Americans commonly boast of their ability to outdo the British and some of the colleges promptly scored a triumph (?) by having their students practice on their own account during college vacations. Fortunately these practices have been abandoned.

In this way veterinary science became to many a jumble of fact and fiction without any enduring basis, or any correlation between any two subjects in the curriculum, and the miseducated veterinarians, without secure foundation, were exposed to numerous perils. One of the most acute of these dangers at present is their want of power to resist gross commercialism. One group of veterinarians, imbued with an intense commercial spirit, has veered from the honored lines of veterinary activity and entered upon a career having as its only goal financial gain. They concoct an alleged cure or preventive for each known disease and extras for unknown maladies. Keen observers of conditions, they have entered this field because they knew there was a demand for nostrums among insecurely educated men.

The nostrum factories are largely the effect, rather than the cause of this breakdown in the profession. The point has now

been reached where the nostrum vendor offers for sale an alleged remedy for each animal disease which the laws do not prohibit doctoring, the dose of the nostrum is prescribed, a hypodermic syringe is offered, the nostrum factory relieves the practitioner from the heavy labor of thinking, especially about the nature of the disease, and will make a diagnosis if the practitioner will send a sample of blood, feces, urine, saliva or discarded cud and, with a dose of medicine will include as a prize package, a fine prognosis.

The practitioner is wanting in the secure foundation obtainable only from conscientious study of standard literature, has no standard library which he may consult, and drifts along without chart or compass. The nostrum vendor industriously plies the muddled practitioner with alleged literature, often flavored with some which is real, in a manner to intensify the deceit and the practitioner constantly and hopelessly sinks deeper and deeper into serfdom. In his dismay he grasps at current veterinary literature as a reliable support. Here he finds the advertising columns of most journals gorged with nostrum propaganda and the reading columns themselves are permeated by cleverly disguised contributions which are fundamentally designed as nostrum advertisements.

Such is the article on page 736 of the JOURNAL OF THE A. V. M. A. for March, 1923, with foot notes indicating that four other articles of the same tenor, emanating from the same nostrum factory, have invaded the reading columns of two additional American journals, leaving but one with its columns unpolluted from this source. The subscribers pay the cost of publication of these directly, and indirectly pay for propaganda from the same factory appearing in the advertising columns. If each reader had at hand and studied carefully one of the standard treatises upon endocrinology, the nostrum factory would not waste its ink in writing such stuff.

On page 78 of the JOURNAL OF THE A. V. M. A. for April, 1923, Professor Sisson justly and vigorously criticises the sayings of two alleged sterility experts, one of whom is a noted nostrum manufacturer and the other of similar ideals but cloaked in the professorial gown of a great university. The former states braggingly, "it is not possible * * * to make specialists of you here in a couple of hours (!) * * * the next thing you ought to do is to come and spend a week with me (at my nostrum factory), and I will make real men of you."

According to Genesis I, the Creator made Adam in one day

but there is nothing on record to indicate that he ever tried to make another in so brief a time. The serious imperfections of Adam were possibly due to his having been thrown together too hurriedly, and the boast of a nostrum manufacturer that he can make a real man in seven days should not be accepted without investigation. If his hearers or readers had been familiar with the existing literature upon sterility, he would not have made an assertion so foreign to the facts. One of the chief aims of nostrum makers and vendors is to leave the impression upon their audience that no valuable standard literature exists, upon the subject being discussed, and that their boastful words constitute all that is known upon the subject and that this is their personal creation.

Veterinary journals and literary programs at veterinary conventions are vital to the growth and development of veterinary science. They can never replace standard veterinary literature. Current veterinary literature should be jealously guarded and as rapidly as possible should be purged of the pollution which is now so insidiously and constantly permeating its advertising and literary pages. One of the greatest aids to clean and helpful current veterinary literature is in the development of a higher regard for, and more intimate acquaintance with standard writings.

HARD ON THE PEOPLE

"Dynamiting people out of cars on to horses." This will be the slogan of the first annual horse show, to be held at the Michigan Agricultural College, at East Lansing, May 30. The Memorial Day fete, the first to be held, is to be sponsored by the Reserve Officers' Training Corps of the M. A. C. Cups and ribbons are to be awarded for the various events. The horse show will be the social event of the season.

DR. J. S. ANDERSON JOINS CORN STATES

Dr. J. S. Anderson (Chi. '94) of Aurora, Nebr., has joined the veterinary service and sales force of the Corn States Serum Company and will have his headquarters at 2118 Lake Street, Lincoln, Nebr. Dr. Anderson practiced for a long time in Seward, Nebr., was a member of the Nebraska State Board of Veterinary Medical Examiners for fourteen years, and served as State Veterinarian of Nebraska from 1915 to 1919. Dr. Anderson is one of the most favorably known veterinarians in the Central West and we wish him success in his new connection.

A CONFIDENTIAL TALK WITH DR. SEPTIMUS SISSON

By J. F. DeVine, *Goshen, N. Y.*

After reading in the April number of this Journal the impetuous criticisms by Dr. Sisson, my first thought was to laugh at those pertaining to myself. Knowing the doctor slightly, I thought that perhaps, in a fit of nocturnal wanderings, he had become twisted in his serpentine name, had hallucinations, and, under this spell, belched forth what he knew not.

In extending my charitable view I said: "Those who read it will recognize at once that the writer was afflicted more with bile than brains." But, on further reflection, it occurred to me that it might be well for someone to stop occasionally, long enough to tie a few bowknots in the ears of some of the jackasses that from time to time inflict our professional journals with their venom.

Dr. Sisson criticizes the statement, yea, ridicules it, spits on it, that a man can become so proficient in sterility work as to be able, in most cases, to tell within three or four days (which gives a leeway of eight days) how long a cow has been bred, during the period from 6 to 12 weeks of pregnancy, which is of distinct advantage in the case of accidental service, or where more than one sire is used in a herd. He then adorns himself with a celestial halo and warns us that there are no "Norm-Tables of bovine embryos, and that no veterinary anatomist, in this country at least, has ever had the necessary time, facilities or material for such an extensive research." May we ask what does a capable clinician care for what the anatomy sharks have failed to discover? When they know so little, why is it that one presumes to criticise and abuse others?

I have a suggestion. Let Dr. Sisson secure for our next clinic, at the A.V.M.A. meeting, ten dairy cows that have been bred and have conceived, ranging in pregnancy from 6 weeks to 3 months, having accurate records of the dates of breeding, and I will promise to examine them at the clinic and tell him, in over 75% of the cases, within 4 days of the date the animal conceived. This is an opportunity to prove the sincerity of my statement or to add more glory to the king of critics, in the presence of an audience. Anyone who has even a meager knowledge of sterility work knows that we do not measure an embryo by palpation.

We have no concern, as a matter of fact, in its size *per se*. It is the size, shape, tension and density of the pregnant horn that guides us.

Second criticism. Here the doctor surely has it on us. While we did refer at the clinic to the advantage of knowing the normal size and pulse of the arteries supplying the uterus, we made particular reference to the posterior uterine *or* vaginal artery. The stenographer did not catch us just right, and ran the words together, reporting it as "posterovaginal" artery. This was an extemporaneous talk. It was not submitted to the author for correction, and was not intended as a manuscript for a text-book; but we would warn all stenographers in the future, if they err in reporting a meeting, let the condition for accurate hearing be ever so unsatisfactory, that they may expect to have Dr. Sisson swoop down upon them and out-vixen Xanthippe in his invocation of the God of Vengeance. Possibly here, too, the doctor was whipping someone else over our shoulder and his spleen was meant for W. L. Williams; because by referring to an article I wrote on the "Diagnosis of Pregnancy" in Veterinary Medicine, it will be found that I referred to the artery as the posterior uterine artery, by some called the vaginal artery. And then if we refer to Williams' "Diseases of the Genital Organs of Domestic Animals," p. 123, first paragraph, we find that Williams states: "The posterior uterine or vaginal artery is given off from the internal pudic."

We note further that the doctor insinuates that we do not know even where the ovaries are located, because when we were working on the Jersey cow at the clinic, I stated that my experience has been that most beginners reached too far in, to locate the ovaries. After attempting for the past ten years to assist others in locating the organs, for manipulation, during which time I have given at least 100 or more demonstrations, I found that the inexperienced operator invariably reaches too far in, before searching for the uterus and ovaries. So, at the clinic, I drew the attention of the audience to the fact that after I had grasped the cervix and ovaries, that my arms were in but a short way past the wrists. It is at once apparent from the doctor's deductions that we knew nothing about what we were doing.—Did not know our wrists from our elbows. As to the truth of this, or the justice of such criticism, we will leave that to our colleagues with whom we have worked.

The doctor does not stop here. No, indeed! It is hard for

such a mighty mind to be controlled by terminal facilities. He advises us in the third paragraph of this storm of hostilities, that he is not a pathologist or clinician, but he is quite certain he is capable of criticizing a man that has been an honest, hard-working clinician for twenty-five years; and when he has spent his wrath on him, he then goes after the pathologist. I do not know how the pathologist will take his criticism, but I will say that if every speaker has to be exposed to malignant vituperation and insolent cynicism for such petty and unimportant violations, how long will it be before it is unsafe for anyone to attempt to take part, extemporaneously, at our clinics or our meetings? There is not a constructive or important word in the doctor's article, notwithstanding that he regrets such criticisms are not pleasant to make. If he alone has not received pleasure by putting his spawn into print, then his splash has been in vain. It is Gall, masquerading as Grace.

TWO NEW STATE VETERINARIANS

Dr. F. A. Zimmer of Pataskala, Ohio, has been appointed State Veterinarian of Ohio, succeeding Dr. B. H. Edgington. Dr. Zimmer is a graduate of Ohio State University, class of 1909. Immediately after graduation he entered upon field work, under Dr. Paul Fischer, who was State Veterinarian at the time. Dr. Zimmer was later appointed chief of the field veterinarian staff, which position, together with that of Acting State Veterinarian under Dr. Fischer, he held until 1915. From that date he was in active practice at Pataskala, until March 1, 1923, when he assumed his new duties.

Dr. Clifton D. Lowe has been appointed State Veterinarian of Tennessee succeeding Dr. M. Jacob, who has been Acting State Veterinarian. Dr. Jacob's duties at the University were so heavy that he was unable to look after two offices, although great pressure was brought to bear upon him to accept the post of State Veterinarian. Dr. Lowe is a graduate of Ohio State University, class of 1910. Following graduation he entered the employ of the Federal Bureau of Animal Industry, then took up work in the Extension Division of the University of Tennessee, later was Veterinarian for the Southern Railway and recently has been connected with the American Aberdeen-Angus Breeders' Association, as Southern Field Representative.

CLINICAL AND CASE REPORTS

(Practitioners and others are invited to contribute to this department reports of unusual and interesting cases which may be helpful to others in the profession.)

END RESULTS IN THE USE OF POTASSIUM DICHROMATE

By H. W. WILSON, *Helena, Ark.*

It was with considerable interest that I read the article entitled "Observations on the Treatment of Purpura Hemorrhagica," in the March number of the JOURNAL, and wish to state that during my period of duty at A. R. D. No. 317, Camp Pike, Ark., from September 2, 1917 to March 5, 1919, I purchased the first potassium dichromate used there, as it was not on the table of drugs listed for distribution by the Medical Supply Depot.

I wish to add to what has been written, that I gave as high as 45-gr. doses, repeated in 12 hours in a few cases, and repeated many others as often as every 24 hours, without any ill effects in some cases, and very gratifying results in many others. Dr. L. E. Smith, of Iowa, who was there during this work, may have given as large a dose as 45 grains, repeated more often than 48 hours, also.

Now for some observations that the other boys may not have had the opportunity to come in contact with. Instead of returning to Illinois to practice I located in Arkansas, upon my discharge from the Army, and in this way had an opportunity to see hundreds of mules and horses that had been purchased at the auction sales held at Camp Pike. I recognized many of these as having been in the hospital and some for pupura hemorrhagica. Several were deaf and blind, while others were either deaf or blind. There may be no connection between these after-effects and the treatment, but my opinion is that while we did not have visible signs of the bad after-effects of giving potassium dichromate intravenously *then*, months later these results were noticeable in the form of the above mentioned unsoundnesses.

In the first few cases, where even a drop or two of the solution was allowed to escape into the muscular or subcutaneous tissues, or where later on, when the technique was more careful, but where by accident, some of the solution was deposited in the

tissues or where the needle was not cleared of all of the solution, by the injection of water or allowing some blood to run out through the needle, intense suppuration took place. In one case, posted by me, in which this unfortunate occurrence took place while I was administering the solution, the jugular vein was nearly obliterated in the mass of degenerated tissue.

While I have used potassium dichromate in these cases since returning to practice, I have used the drug in greater dilution. Instead of 16 ounces of water I use 24 to 32 ounces of distilled water to the 30- or 45-gr. dose. Any drug capable of producing the effects noticed, by its deposit in the subcutaneous or muscular tissues, is certainly causing some action when injected into the blood-stream, and, although these cases respond nicely, I believe the story is not finished until the last installment is written, which may read: "Treatment successful, but patient deaf or blind." I should like to have the opinion of Dr. L. E. Smith as well; maybe he has had an opportunity to gather additional information in this regard.

MOIST ECZEMA OR CANKER OF THE EAR OF THE DOG[1]

By J. P. TURNER, *Washington, D. C.*

The following treatment for moist eczema (canker) of the ear of dogs will be found very satisfactory:

1. When the ears are very painful, drop a small quantity of 4 per cent solution of novocaine in each ear and carefully work it into the ear. Wait five minutes before proceeding further.
2. Swab out each ear thoroughly with hydrogen peroxide (pure) and clean away all discharge and scales, until the ears appear clean. This may require a half-hour of work or more. Dry out with cotton on dressing forceps.
3. With small quantity of cotton on dressing forceps, cauterize the ears as deeply as possible with silver nitrate solution 15 gr. to 1 oz. Dry out thoroughly with cotton.
4. Pour small quantity of alcohol into each ear, in order to dehydrate the skin. Swab out the cotton until dry.
5. Pack ears as deeply as possible with bismuth-formic-iodide powder.

This treatment to be administered twice a week. The ears are to be packed daily with the bismuth-formic-iodide powder.

[1]From the University of Pennsylvania Veterinary Extension Quarterly, No. 9.

REVIEWS

THE TOPOGRAPHICAL ANATOMY OF THE THORAX AND ABDOMEN OF THE HORSE. O. Charnock Bradley. Pages XII, 204, 85 figures. Published by William Wood & Co., New York.

As stated by the author in the preface, the aim of this book is the same as that of its predecessor, "The Topographical Anatomy of the Limbs of the Horse," namely, to serve as a sufficiently full dissection-guide for the student, and possibly to help the practitioner when in doubt respecting the topography of a region.

As a dissection guide the book seems admirable as far as it goes. But the reviewer, in the light of more than thirty years of experience, does not believe that the instructions for dissection are sufficient for the average veterinary student (in this country at least), unless he has had considerable training and experience in similar laboratory work, or is quite closely supervised in using the present guide. As an example of what is here meant, there do not appear to be any instructions as to the dissection of the inguinal canal. Of course the situation is quite different in case the student has already had, say, a year of discipline in laboratory technique of the kind needed.

The reviewer is a firm believer in the prime importance of requiring students to acquire proficiency in dissection, not only because this is absolutely necessary for the acquisition of sound anatomical knowledge, but also on account of its great value as training for precision in the clinical branches, especially physical diagnosis and surgery. Of course the foregoing is not to be understood as favoring anything of the nature of a Prussian drill-master, either in person or in the form of a book. Initiative and resourcefulness on the part of the student are to be encouraged, but, on the other hand, it is important that the time and energy of the instructor be conserved to the end that he may devote himself largely to the elucidation of difficult points and to adding to present knowledge.

The reviewer must confess regretfully that he is disappointed over the relatively small amount of strictly topographic matter included; this refers both to text and figures. Perhaps expectation was unreasonably high, and "the wish was father to the thought." An up-to-date and well-illustrated topographic work is very badly needed, and is not yet available either in the

present work or in Montané & Bourdelle's monumental volume. Diagrams have their uses, but only in an extremely limited degree in topography. We need, especially, good reproductions of sections, such as are provided in works on Human Anatomy. Extensive use of sections as such and by means of the projection lantern convinced the reviewer long ago that this is the only means by which one can acquire accurate and adequate knowledge of many topographic data which are essential in the application of Anatomy in Clinical Diagnosis and Treatment.

The veterinarian is even more dependent on such knowledge than is his confrere in human medicine, since the X-rays and the fluoroscope are not yet available for dealing with the larger animals. The Author has rather disarmed criticism by labeling figures 39 to 42 as diagrams. But even so could not the ventral part of the diaphragm have been correctly indicated? The error here is serious, because it has necessarily involved correlative errors concerning the topography of the heart and the anterior flexures of the colon. The delineation of the ventral border of the right lung in figures 6 and 39 is decidedly not in conformity with observations of careful dissections and sections or auscultation and percussion—so far as the latter are practicable. The pelvic flexure of the colon is shown in a quite exceptional position; it is usually in the right inguinal region. The statement (p. 96) giving the impression that the terminal part of the great colon is in "the neighborhood of the pelvic inlet" is decidedly misleading and is not in conformity with the correct statement (p. 100) that it is ventral to the left kidney. This is one of a good many points which are of practical importance with reference to exploration *per rectum*.

The statement (p. 115) that the *saccus caecus* of the stomach is "suspended" from the left lumbar part of the diaphragm by the continuity of the gastro-splenic and phrenico-splenic ligaments does not seem justifiable. The use of the word "suspended' to designate peritoneal attachments of viscera to the bodywall in general connotes an erroneous conception and it would therefore be a good thing if we could get rid of it.

The inguinal ligament (of Poupart) is referred to in the following way (p. 84): "A considerable band of tendinous fibres stretches from the tuber coxae to the pecten of the pubis." This is an example of the danger incurred by transferring both the name and the idea of a structure from human anatomy. The band-like thickening of the lower border of the aponeurosis

of the external oblique muscle, which stretches between the anterior-superior iliac spine and the pubic tubercle, is a special development which is correlated with the downward thrust of the weight of the abdominal viscera of man. In the horse the weight of the viscera centers towards the umbilical region, and in conformity therewith there is nothing like the ligament which is present in man. The so-called ligament of the horse, ox, etc., is no other than the posterior part of the aponeurosis of the external oblique muscle; the term "ligament," as applied to it in veterinary anatomy, is an unfortunate misnomer and students need to be warned not to be misled by it.

About twenty of the illustrations are most satisfactory from the topographic standpoint; some of them are quite superior to those found in other works and are therefore most welcome additions to our literature. The Author's reference in the preface to "the existing difficult circumstances" strikes a sympathetic chord among workers in the same field in this country. Indeed we seem to be even worse off here in this respect, as publishers of standing refuse even to consent to much-needed revision of existing works, much less to undertake the publication of new literature.

Dr. Bradley's book can be warmly recommended to students to be used in connection with other books which contain fuller descriptions of a good many structures. The practitioner will also find it useful with reference to certain topographic points.

S. S.

VETERINARY HYGIENE. Care of Health and General Science of Contagious Diseases of Domesticated Animals. Martin Klimmer, Ph. D., D. M. V., Professor of Veterinary Hygiene in the Veterinary High School of Dresden. Third, newly revised edition. Authorized translation by A. A. Leibold, D. V. M., formerly Professor of Physiology and Hygiene, Chicago Veterinary College. Annotations by John R. Mohler, A. B., V. M. D., Chief of the U. S. Bureau of Animal Industry. 430 pp., with 278 illustrations. Published by Alexander Eger, Chicago, 1923. Price $4.75, cloth.

This is a translation of a standard German treatise, and the reader will be agreeably surprised upon noting the variety of subjects which the Author has dealt with under the single term "Veterinary Hygiene." The book is written with characteristic

German thoroughness and strict attention to detail. The Translator has attempted to render the English as literal as possible, at the same time avoiding stilted phraseology, which is so often necessary when adhering closely to the original text. The Translator has seen fit to add occasional notes regarding conditions and occurrences in countries other than those covered by the Author. There need be no hesitation, upon the part of American veterinarians, to purchase this book upon the score that it has been written from the standpoint of a German.

The book is divided into eight sections. These deal respectively with the following subjects: The Atmosphere, The Soil, Water, Noxious Agents in Feeds, The Care and Management of Animals, The Pasture and Exercising Lot, The Stable, and Contagious Diseases. In the latter section the subjects of biological therapy and tests are very concisely presented. This section also contains some very valuable data in connection with disinfection.

With the trend of veterinary science so strongly in the direction of disease prevention, it will stand every veterinarian in good stead to read this book and digest its contents. The veterinarian is the logical person to dispense the kind of information that is contained in this work, and unless veterinarians embrace every opportunity for rendering this sort of service, our farmers and live stock breeders will not get into the habit of going to the veterinarian to get advice of this kind. In translating this work and placing it at the disposal of the English-speaking veterinarians the Translator has rendered them a real service. The publisher has shown his confidence in our profession as a consumer of good veterinary literature by placing this work at our disposal.

ABSTRACTS

FÅGELTUBERKULOSENS BEKÄMPANDE MED LEDNING AV TUBERKULINUNDERSÖKNING. (Eradication of Avian Tuberculosis by the Aid of the Tuberculin Test). E. Klarin. Skandinavisk Veterinär-Tidskrift, Uppsala and Stockholm, 1922, 12, 170-175. (Reprinted from Abst. of Bact.)

This article is a review of the results obtained by three Swedish veterinarians who used the method of Van Es in applying the intradermal tuberculin test for the purpose of combatting avian tuberculosis. A plan for the eradication is given. Avian tuberculin was found the most reliable. By testing, the following

classes of birds were removed from the flock: (1) Typical reactors, (2) Those giving doubtful reaction, and (3) Those failing to react but which were found suspicious on physical examination. The latter class was usually found to be suffering with old cases of tuberculosis. They were generally cachectic. One of these veterinarians thinks that the test should be repeated within four weeks after the first one in order to detect new cases which might have slipped by in the first test.

The author is of the opinion that these tests (employed in many flocks, numbering several hundred birds) show that the tuberculin test as worked out by Van Es is of great value in the eradication of avian tuberculosis. It is also brought out that thorough physical examination of non-reactors must accompany the test.

H. J. S.

KÄKMYOSIT HOS HÄST (Myositis of the Jaw in the Horse). Hugo Heijbel. Svensk Veterinärtidskrift, Stockholm, 1922, 27, 1-12. (Reprinted from Abst. of Bact.)

In this article a disease of colts is described which is characterized by trismus with subsequent degenerations of the muscles involved, total or partial paralysis of the pharyngeal muscles and at times paralysis and degeneration of certain groups of muscles in the fore limbs, especially the extensors of the carpal joint. Loose bowel discharges, or even diarrhea, generally precedes these symptoms. The disease runs a rapid course (two to ten days) and is usually fatal. Post-mortem examinations revealed none but local inflammatory degenerative changes in the muscles of the jaw and fore limbs. Specimens sent to the veterinary institute for bacteriological examination revealed streptococci, which Professor Bergman was inclined to believe were the cause of the disease. The author, however, points out that the disease usually shows no fever until the later stages, is not contagious and in general gives the impression of being due to some digestive disturbance rather than streptococcic infection, the latter being, in his opinion, purely secondary or terminal. The disease appears to be a new ailment and has caused great losses in certain districts in Sweden.

N. Sture Karlberg suggests the possibility that this disease is identical with azoturia, due to the fact that in the cases coming

under his observation hemoglobinuria was always present and the disease occurred under conditions which would predispose to azoturia.

H. J. S.

PSEUDOTUBERKULOS FRÅN PATALOGISK-ANATOMISK SYNPUNKT. (Pseudo-tuberculosis from the Viewpoint of Pathological Anatomy). Sven Wall. Svensk Veterinärtidskrift, Stockholm, 1922, 27, 107-114 and 135-140. (Reprinted from Abst. of Bact.)

The author discusses the etiology and pathology of diseases in man and animals which on autopsy reveal tubercular lesions. Such lesions have been found in all domesticated animals, chickens, wild and domesticated rabbits, guinea pigs and man. Disease processes of this kind may be caused mechanically by foreign objects such as small particles of coal or similar objects. Pseudotuberculosis developing from areas of necrosis is also included under mechanical or foreign-body pseudotuberculosis. As an example of the latter fat necrosis in cattle is mentioned. The various microorganisms mentioned as causes of pseudotuberculosis include yeasts, molds and bacteria. Worms are mentioned as a cause of pseudotuberculosis in sheep and horses. Under bacterial pseudotuberculosis a number of diseases are described.

The author calls attention to the fact that pseudotuberculosis is not a term designating one particular disease. It is a term applied to conditions which on macroscopic examination resemble tuberculosis.

H. J. S.

TRE FALL AV PENISTUBERKULOS HOS NÖTKREATUR (Three cases of Tuberculosis of the Penis in Cattle). Arvid M. Berhman and Bertil Blomberg. Skandinavisk Veterinär-Tidskrift, Uppsala and Stockholm, 1922, 12, 1-21 (Reprinted from Abst. of Bact.)

A review of the literature on similar diseases in man and animals and personal observations on three cases in cattle, together with three macroscopic and five microscopic illustrations. The authors conclude that, as one of these cases was proved to be primary and the other two were most likely so, tuberculosis of the penis is a result of infection during coitus. This seems only natural when it is considered that tuberculosis

of the uterus in cows is very common. If accurately diagnosed tuberculosis of the penis might prove to be of more common occurrence in bulls than is now assumed. Two guinea pigs inoculated with smegma from the prepuce of the third case investigated died from tuberculosis, indicating that such cases may be open.

H. J. S.

STUDIER I SERUMKONTROLL OCH BAKTERIOLOGISK KÖTTKONTROLL.

(Studies on the Control of Serum and Bacteriological Inspection of Meat). O. Brandt. Skandinavisk Veterinär-Tidskrift, 1922, Uppsala and Stockholm, 12, 127-153. (Reprinted from Abst. of Bact.)

This is a study of the methods employed at the State Institute for Experimental Therapy, Frankfurt A. M., in determining the potency of serums and antitoxins.

The second part of this article deals with the methods employed in the bacteriological examination of meat in the slaughter houses in Berlin, München and Hamberg. The significance of the presence of various bacteria is also discussed. The various charts employed in this work are reproduced.

H. J. S.

WHERE TEDDY BEARS COME FROM

Botany Prof.: "What animals come from plants and what plants produce them?"

Frosh: "Teddy-bears come from underwear plants."—*'Ee-'Aw*

PLAIN ENOUGH

First Cockroach: "Hey there! What's your hurry? Where's the fire?"

Second Cockroach: "Fool! Can't you read? Don't you see it says 'Tear along this line'?"—*Goblin.*

STILL HAS IT

Irate Farmer: "Look here, you swindler! When you sold me this horse you said that in three months' time I wouldn't part with it for three times the price I gave for it!"

Dealer: "Well, you haven't, have you?"—*Breeders' Gazette.*

AMERICAN VETERINARY MEDICAL ASSOCIATION

Proceedings of Fifty-ninth Annual Meeting, St. Louis, Mo. August 28 to September 1, 1922

(*Continued from the April* JOURNAL)

SECTION ON EDUCATION AND RESEARCH

TUESDAY MORNING, AUGUST 29, 1922

The first session of the Section on Education and Research was called to order at ten o'clock, by Dr. E. M. Pickens, of College Park, Maryland. (No stenographer being present, the minutes were recorded by the Secretary.)

The following papers were delivered:

"Preliminary Report on the Differentiation of the Various Organisms Belonging to the Hemorrhagic Septicemia Group," by Drs. C. P. Fitch and E. N. Nelson, St. Paul, Minnesota. (Published in the JOURNAL, this issue, page 147.)

"The Character and Possible Significance of the Bang Abortion Bacillus that Attacks Swine," by Dr. W. E. Cotton, Washington, D. C. (Published in the JOURNAL, November, 1922.)

"Investigations on the Immunology of Swine Plague," by Drs. R. R. Birch and J. W. Benner, Ithaca, New York. (Published in the JOURNAL, November, 1922).

"The Veterinary Curriculum: Some Suggested Changes," by Dr. V. A. Moore, Ithaca, New York. (Published in the JOURNAL December, 1922.

ADJOURNMENT

FRIDAY MORNING, SEPTEMBER 1, 1922

The second session was called to order at eight-forty-five o'clock, by Chairman Pickens.

CHAIRMAN PICKENS: We have one paper left over from the previous session, "The Role of the Udder and its Secretion in Bovine Infectious Abortion," by Dr. Ward Giltner, I. F. Huddleson and R. L. Tweed. None of the gentlemen is present. What shall we do with the paper?

DR. C. P. FITCH: I move you, Mr. Chairman, that the paper be read by title and that it be printed in the proceedings.

The motion was seconded and carried.

SECRETARY GOSS: "The Role of the Udder and its Secretion in Bovine Infections Abortion," by Dr. Ward Giltner, I. F.

Huddleson, and R. L. Tweed. (Published in the JOURNAL, November, 1922.

CHAIRMAN PICKENS: That brings us up to the last session. The first paper in this session is entitled, "Some Attempts to Control Strongyles in Aneurisms by Means of Intravenous Injections of Drugs, by Drs. Maurice C. Hall and J. E. Shillinger, of Washington, D. C.

DR. FITCH: I move we take the same course with reference to that paper as was taken on the first paper.

The motion was seconded and carried.

SECRETARY GOSS: "Some Attempts to Control Strongyles in Aneurisms by Means of Intravenous Injections of Drugs." (Published in the JOURNAL, December, 1922).

CHAIRMAN PICKENS: Dr. Goss informs me we have another paper submitted by the same authors. This paper, I understand, is not on the program.

DR. GOSS: This paper is entitled, "The Removal of Heterakids from the Ceca of Chickens by Rectal Injections of Anthelmintics," by Drs. Maurice C. Hall and Jacob E. Shillinger.

DR. FITCH: I move the paper be referred back to the authors.

The motion was seconded and carried. (Paper published in the JOURNAL, February, 1923.)

CHAIRMAN PICKENS: The second paper on the program is entitled, " 'Jiggers,' or Bot Anaphylaxis," by Dr. A. E. Cameron, Lethbridge, Alta., Canada. (Paper read and published in the JOURNAL, December, 1922.)

We will proceed with the next paper on the program, entitled, "Studies in Complement Fixation in Bovine Tuberculosis," by Drs. J. A. Kolmer, Dermatological Laboratories, and Fred Boerner, Jr., Philadelphia, Pa.

DR. BOERNER: Mr. Chairman and Gentlemen of the Section of Education and Research: It has been necessary for us to divide our paper into three parts. We really have three papers. When we sent our title to the Secretary we thought of preparing one paper, but it was necessary to divide it into three parts, to cover the different parts in more detail than we contemplated. I have, however, abstracted the three papers, the object being not to take too much time on the program.

(Dr. Boerner read his paper entitled "Studies in Complement Fixation in Bovine Tuberculosis," which is divided in three sections, with the following titles: 1. "The influence of heating sera and the kind and duration of primary incubation upon the

occurrence of specific and non-specific tuberculosis complement fixation tests with cattle sera." 2. "The occurrence of specific tuberculosis complement fixing substances in the sera of tuberculin-negative cattle." 3. "The diagnostic value of the complement fixation test in bovine tuberculosis." (To be published in the JOURNAL.)

CHAIRMAN PICKENS: At the last meeting of the Section we didn't have a stenographer until the last paper was read, so we have no record of the discussion on earlier papers. If the people who entered into that discussion will hand in their remarks to Dr. Goss, we can then have our preceedings complete; otherwise we will have no record.

The next paper on the program, and the last one, is entitled, "Pathogenicity of *Bacterium Suisepticus* for Hogs," by Drs. A. F. Schalk and L. M. Roderick, of the Agricultural College, North Dakota. Are either of the gentlemen here? (No response).

What is your pleasure with this paper?

DR. FITCH: Does the Secretary have the paper?

SECRETARY GOSS: I have it.

DR. FITCH: I move we take the same course as we took with the other papers.

The motion was seconded and carried.

CHAIRMAN PICKENS: We are supposed to adjourn at ten o'clock, and if there is no opposition we will not take time to go into it. The Secretary will read the paper by title.

SECRETARY GOSS: "Pathogenicity of *Bacterium Suisepticus* for Hogs."

CHAIRMAN PICKENS: The paper will be published in the proceedings. (Published in the JOURNAL, December, 1922.)

Does anybody have anything to bring before the Section before we proceed to the election of officers? If not, nominations for Chairman of this Section are in order.

DR. DIMOCK: Mr. Chairman, I take pleasure in nominating Dr. Pickens for Chairman of this Section for next year.

CHAIRMAN PICKENS: I decline the favor for some one else.

DR. FITCH: I would like to place in nomination a man who has served the Section faithfully for a number of years, and has been the means of establishing this as one of the Sections of this Association. I take great pleasure in placing in nomination Dr. Goss for Chairman of this Section.

The nomination was seconded.

CHAIRMAN PICKENS: Are there any other nominations?

DR. BOERNER: I move you the nominations be closed.

The motion was seconded and carried.

DR. FITCH: I move the unanimous election of Dr. Goss as Chairman of the Section.

The motion was seconded and carried.

CHAIRMAN PICKENS: I think Dr. Goss can cast a ballot for himself.

The next officer to be elected is Secretary of the Section. We are ready for nominations.

DR. BOERNER: I nominate Dr. Pickens for Secretary of the Section.

The nomination was seconded.

The newly elected Chairman, Dr. Goss, took the chair.

DR. R. R. BIRCH (Ithaca, N. Y.): I move the nominations be closed.

The motion was seconded and carried.

DR. BIRCH: I move the unanimous election of Dr. Pickens as Secretary.

The motion was seconded and carried.

CHAIRMAN GOSS: This, I think, completes our business for this morning; unless there is other business to come before the Section, a motion to adjourn is in order.

DR. FRITCH: I move we adjourn.

The motion was seconded, and the meeting adjourned at ten-fifteen a. m.

ADJOURNMENT

GENERAL SESSION

FRIDAY MORNING, SEPTEMBER 1, 1922

The meeting convened at 10:25 a.m., President Kinsley presiding.

PRESIDENT KINSLEY: The first thing we will have this morning will be the report of the Audit Committee. Dr. Marsteller.

DR. MARSTELLER: "The Audit Committee has examined the Treasurer's report and finds it to be correct.

"A certified copy of the Treasurer's report, from a public accountant, will be placed in the hands of the Secretary. We recommend that the Treasurer's report be accepted.

"The Audit Committee recommends that the By-Laws be changed to provide for auditing the books of the Treasurer by a certified accountant and this report be submitted to the

Executive Board at each annual meeting, and that the Audit Committee be dispensed with.

"There is no use having an Audit Committee. The books of the Treasurer should be gone over by the auditor and that report go to the Executive Committee."

PRESIDENT KINSLEY: Gentlemen, you have heard the report. What is your pleasure?

DR. CAMPBELL: I move this report be adopted and the recommendation regarding the change of the By-laws come before our meeting next year.

PRESIDENT KINSLEY: Dr. Campbell moves that the report of the Audit Committee be received and that the recommendation serve as a notice for a change in the Constitution and By-laws, eliminating the Audit Committee. Is there a second to that motion?

. . . The motion was seconded by Dr. Treman . . .

PRESIDENT KINSLEY: Any remarks?

SECRETARY MAYO: In this report it is not provided who shall select the accountant. When I selected an accountant to audit my books this year, he said, "It is rather unusual that they should ask you to select an accountant to audit the books. It looks better for some one who is not interested in the matter to select the auditor." I am offering that as a suggestion.

PRESIDENT KINSLEY: I hope the Executive Committee will accept that suggestion. I believe it is a good one. Is there any further discussion?

. . . The motion was carried . . .

PRESIDENT KINSLEY: Next we will have the report of the Budget Committee.

SECRETARY MAYO: "The Budget Committee recommends that the following amounts, or so much thereof as may be necessary, be appropriated:

President's contingent fund	$ 500
Intelligence and Education	1,000
Legislative Committee	1,000
Committee on Revision of Constitution and By-laws	300
Committee on Abortion	250
Treasurer	300
Publicity	1,000
Ten shares Horse Association of America	50

"And the necessary running expenses of the Secretary's office and Journal office."

PRESIDENT KINSLEY: Gentlemen, you have heard the report of the Budget Committee. What is your pleasure?

DR. STANGE: I move its adoption.

. . . The motion was seconded and carried . . .

PRESIDENT KINSLEY: Next we will have the report of the Resolutions Committee.

DR. CAMPBELL: "Report of Committee on Resolutions.

"WHEREAS, the recent act of Congress fixing the number of Army officers in active service at 12,000 has reduced the Veterinary Corps to a point where it is impossible to render adequate veterinary service; and

"WHEREAS, the American Veterinary Medical Association, mindful of its responsibilities in preserving and promoting health of animals in this country, of which the Army controls an important part, desires to go on record as favoring a change in the foregoing enactment, be it

"RESOLVED, that the Association, in convention assembled, declares itself as favoring a ratio of not less than 4½ officers per 1,000 public animals, and instructs its Legislative Committee to use its best efforts to secure the necessary remedial legislation at the earliest practical opportunity; and be it further

"RESOLVED, that the Association extend a vote of confidence and moral support to the Surgeon General for his satisfactory administration of the Veterinary Corps and assure him of its abiding interest in the welfare of the Veterinary Corps and its willingness to render assistance, cooperation and material support in its behalf."

DR. V. A. MOORE: I move the adoption of the first resolution.

. . . The motion was seconded . . .

PRESIDENT KINSLEY: Any remarks?

DR. MERILLAT: I simply want to draw your attention to a paragraph of Major Foster's address last night. It seems to me it is a text for our future conduct towards the Veterinary Corps. This reads in effect about like this: For the first time in the military history of the United States, the word "veterinarian" or "the veterinarian" is included in the tables of organization.

I wonder if you comprehend the bigness of that remark. This Association has struggled for something like thirty-two years for status for the veterinarians in the Army, and only after the nation went into war, or when the world was at war and it was apparent that we would soon be involved in a fray, we succeeded, or at least it was decided to give veterinarians a certain amount of recognition, in so far as it gave definite rank to the existing personnel of the Veterinary Corps at that time.

We have been at war, and the general staff of the Army, in its hurried organization to effect some kind of effective fighting force, found it necessary to enlist the competent veterinarians

and give them some kind of satisfactory status. Since then it has been decided by Congress to organize the national defense on a very definite basis. It is now the law of our country to have a regular army which is the regular, martial, constabulary and training unit of the others, a National Guard as a second line of defense, and then the great population of the people as the organized reserve, and in this organization the veterinarians have been given just as good a standing as the engineers, just as good as the artillery, the infantry or the medical service, and has opened up these positions for you to accept.

I want to just say the word that it is a great reflection upon our loyalty to our profession that we have been indifferent to the offer of the Surgeon General in accepting these positions, and puts us in a position of having been insincere in our past efforts for recognition. All the American Veterinary Medical Association has done for veterinary service will go down in history as nothing more than a selfish movement to give rank to something like forty-five veterinarians, unless we show now that we were doing this for the good of the cause that we represent—the veterinary profession.

It seems to me that it is the duty of every able-bodied man, within the range of age designated in the law, to place his application before the Surgeon General and show him that we really meant something when we were asking for recognition during all of these years. (Applause.)

DR. CAMPBELL: I would like to amend Dr. Moore's motion to read that we adopt the resolution and instruct the Secretary to supply the Secretary of War, the Surgeon General and the Chairman of the House and Senate Military Committees with a copy.

DR. V. A. MOORE: I will accept that as the original motion.

SECRETARY MAYO: It is easy enough to get plenty of men in a great emergency. The General Staff has now provided a means by which they can be prepared in times of peace to meet these great emergencies, and it is your patriotic duty to join the Reserve Corps, so that it gives the Surgeon General and the General staff an opportunity of sifting the men, finding out their qualifications and their adaptability before emergency arises, and I hope that every one of you will look at it in that way, first, as a patriotic duty, as a citizen, and as a patriotic duty as a representative of our profession.

PRESIDENT KINSLEY: Any further remarks? If not, all in

favor of the motion which is the adoption of this resolution and the forwarding of copies thereof to the proper officials, signify by saying "Aye." Contrary "No." It is carried.

DR. CAMPBELL: Next resolution.

"WHEREAS, an effort is being made in Colorado and California to abolish animal experimentation, and

"WHEREAS, this Association, composed of over 4,000 veterinarians and representing every state and province of North America, fully realizes the saving of human life and of billions of dollars to the live stock industry in this country, which has resulted directly from knowledge gained through animal experimentation, be it

"RESOLVED, that the American Veterinary Medical Association make every reasonable effort to prevent any and all legislation that may interfere with or render impossible the production of biological products indispensable in the prevention or control of diphtheria, smallpox, whooping cough, typhoid fever, hog cholera, glanders, tuberculosis, and other diseases of man and animals; and be it further

"RESOLVED, that we shall deplore and use our best efforts to prevent enactment of any legislation that may hinder research under proper scientific control into diseases of man and animals that is now being carried on or that may be undertaken in the future for the benefit of mankind."

Mr. President, I move its adoption.

. . . The motion was seconded and carried . . .

DR. CAMPBELL: Next resolution.

"WHEREAS, the Blue Cross Society, under the direction of its President, Miss Maud Phillips, is endeavoring to promote legislation compelling the use of anesthetics in painful operations on animals; and

"WHEREAS, such legislation, if properly drafted and properly enforced, would contribute to greater humaneness in the handling and treatment of animals; be it

"RESOLVED, that the American Veterinary Medical Association which has always stood for kindness and consideration in the treatment of animals and the avoidance of all unnecessary pain in operations upon animals, endorse the motives of the Blue Cross Society in the aforementioned matter and commend its efforts to prevent undue suffering as a result of surgical or other painful operations."

I move the adoption of the resolution.

. . . The motion was seconded and carried . . .

DR. CAMPBELL: Next resolution.

"WHEREAS, this meeting has been a source of unusual inspiration and great educational value to the general practitioner and as such contributing in an unusual degree to the advancement of the greatest body of our membership; be it

"RESOLVED, that we commend the efforts of President Kinsley and those who have so ably assisted him in providing features of special interest to practitioners."

I move the adoption of this resolution.

. . . The motion was seconded . . .

PRESIDENT KINSLEY: It seems to me to be hardly worth while, because that is the duty of the officers of the Association.

SECRETARY MAYO: I will call for the question.

. . . The motion was unanimously carried . . .

DR. CAMPBELL: Next resolution.

"WHEREAS, the careful arrangements of the Local Committees and the Committees on Clinic have contributed greatly to the success of the meeting and the comfort and pleasure of those attending it; be it

"RESOLVED, that we extend to Dr. Rives and those assisting him the thanks of the Association for their earnest efforts for the success of the meeting."

I move the adoption of the resolution.

. . . The motion was seconded and carried . . .

DR. CAMPBELL: Next resolution.

"RESOLVED, by the American Veterinary Medical Association that we join with the American Medical Association in endorsing the Chemical Foundation in their efforts to provide the practitioners of America with American made medicinal preparations."

I move the adoption of the resolution.

. . . The motion was seconded and carried . . .

DR. CAMPBELL: Next resolution.

"WHEREAS, the Armour Packing Company, of East St. Louis, placed its killing-floor at the disposal of our Association for the examination of tuberculin reactors; be it

"RESOLVED, that we extend the thanks of the Association to Armour & Company for their kindness in this matter and also for refreshments furnished at the clinic."

I move the adoption of the resolution.

. . . The motion was seconded and carried . . .

DR. CAMPBELL: Next resolution.

"WHEREAS, the St. Louis Tourist and Convention Bureau has been diligent in looking after the details incident to our meeting and has been liberal in the entertainment provided, for which it has borne all expenses; be it

"RESOLVED, that we extend the thanks of the Association to the said Bureau for its cordial hospitality that has contributed so much to the success of the present meeting."

I move the adoption of the resolution.

. . . The motion was seconded and carried . . .

DR. CAMPBELL: The resolutions were signed by all the members of the Committee.

PRESIDENT KINSLEY: The next order of business will be the report of the Committee on Intelligence and Education.

. . . (Dr. H. D. Bergman read the report, which follows.)

During the year one vacancy and one resignation from this committee necessitated the appointment of two new members, Dr. J. S. Koen being appointed to fulfill the unexpired term of Dr. Cassius Way, and Dr. J. Fleming appointed for the five-year period as B. A. I. representative on the committee. In view of the very complete examination made last year, of all the schools accredited by this association, when twelve of the fifteen schools were visited by representatives of the committee, inspections of schools this year were confined to schools either not visited last year, or where special request was made, or matters of especial educational importance involved. During the present year, 1921-1922, the following institutions have been visited by members of this committee:

Colorado State College, Division of Veterinary Medicine.
Indiana Veterinary College.
Iowa State College, Division of Veterinary Medicine.
New York State Veterinary College, New York University.
St. Joseph Veterinary College.

State College of Washington, College of Veterinary Science.

In addition to actual inspections made, complete data have been collected from all schools relative to appropriations, improved facilities in the way of buildings and equipment, student enrollment, entrance credentials of matriculants, and changes in faculty personnel. (The detailed reports on the foregoing are on file and available for examination) With apparently only one exception, all institutions on the approved list of this Association are complying with the regulations relative to entrance requirements and length of curriculum. The one exception involves the matriculation of certain Federal Board students and students to advanced standing and is being given careful attention by the Committee. In view of the rather small enrollment of students in the majority of the veterinary colleges, your committee is glad to report no decrease in appropriations for veterinary educational and research work in the various schools but rather is able to report some increases and additional and improved facilities in the way of buildings and equipment in a number of schools. Outstanding improvemen s the past ye r, or appropriations immediately available f r same, may be briefly mentioned as follows:

Alabama Polytechnic Institute, College of Veterinary Medicine; new laboratory, hospital and clinic buildings totalling an expenditure of $50,000.

Iowa State College, Division of Veterinary Medicine; additional buildings and facilities for research work including 60-acre, research farm, $60,000.

Kansas State Agricultural College, Division of Veterinary Medicine; appropriation and plans completed for a $100,000 hospital and clinic building.

New York State Veterinary College, Cornell University; appropriation of $100,000 for construction of new wing to main building for offices, auditorium, library and laboratories.

Georgia State College of Agriculture, Division of Veterinary Medicine; new anatomy building.

State College of Washington, College of Veterinary Science; increased hospital and clinical facilities.

The most outstanding change in connection with the veterinary colleges, and one in which the members of this Association will be much interested, inasmuch as it involves one of the oldest schools with many alumni, not only in Canada but in the United States, is the removal of the Ontario Veterinary College from Toronto to Guelph, Ontario, the seat of the Ontario Agricultural College. The new buildings will be ready for occupancy September 1st. The main veterinary building, accommodating offices, class-rooms, laboratories, library, museum, etc., is a three-story structure costing $250,000 exclusive of equipment. The veterinary hospital, a two-story building, situated near the main building, will cost $30,000 exclusive of fittings. The grounds occupied by the veterinary college include fifteen acres. This committee and the entire profession congratulate the Ontario Veterinary College faculty and alumni on their new home and extend best wishes for its future success. The provision of this finely equipped institution, by the Province of Ontario, for the furtherance of veterinary education and research, reflects the importance and confidence of our Canadian friends in the veterinary profession. This is further reflected by increased facilities and improvements allowed this year at the other Canadian school, located at the University of Montreal.

Improvements in educational facilities in the various colleges such as those enumerated mean much to the veterinary profession. The foundation of any profession is its education. "A river cannot rise higher than its source." Likewise, the height to which the veterinary profession can rise depends upon its source, i. e., its educational institutions. The veterinary profession must maintain educational standards equivalent to those of other professions, if it expects to become permanently established on a plane with them. And, indeed, the educational institutions must not fail in their responsibilities. The selection, education, and graduation of young men who must ultimately carry on and maintain the prestige of the veterinary profession is a responsibility which in veterinary institutions in the past has been too lightly considered.

Likewise, the responsibilities of the veterinary colleges in connection with problems of research should be emphasized. Adequate and intelligent research is fundamental to progress in any and all sciences. Your committee is glad to

report increased interest and facilities for carrying on research work in the majority of the veterinary colleges. The decrease in number of students has given more opportunity in many institutions for the devoting of a part of the time of the faculty to research problems, which is being taken advantage of. Hence, while the graduates from veterinary colleges in the future will be fewer in number, there is no doubt but that they will be greater in ability and efficiency. The opportunity for closer association with instructor, constant contact with research work and investigational problems, together with the remarkable improvement in veterinary educational institutions in the past few years, cannot h lp but develop more thoroughly and broadly trained veterinarians and ultimately promote the veterinary cause.

The listed "Essentials of an Approved Veterinary College," as recommended by this Committee and adopted by the Association last year, has proven of material value to your committee in connection with the inspection of veterinary colleges. It not only outlines in definite form a fair standard which the Association believes educational institutions should conform with, but enables this committee to reply with some accuracy to the often-put question as to what constitutes the A. V. M. A. requirements of an approved veterinary college. The adoption by this Association of the proposed "essentials" was undoubtedly a progressive step in veterinary educational affairs.

With the close of the 1921-22 school year, the New York State Veterinary College at New York University has voted to suspend operations until an adequate fund may be secured for its maintenance. This institution, the oldest in the United States, has had increasing difficulties the past few years in securing sufficient financial support to enable it to meet the demands of present-day veterinary education, and to maintain the degree of educational efficiency which it desired to maintain. In April, a representative of this committee met with the Chancellor and Council of New York University, at which time matters relative to the institution were frankly discussed. Later, and upon recommendation of the Alumni Association of the College, it was decided to suspend operations temporarily, until adequate funds shall be secured to rehabilitate the college. In advising this committee regarding the action of the University, the Chancellor expressed his appreciation of the courteous attention accorded the institution by this organization and expressed a desire that the institution might again resume its association with the A. V. M. A., whenever adequate funds may be secured for its rehabilitation and proper maintenance.

During the year the St. Joseph Veterinary College, which was dropped in 1919 from the list of veterinary colleges approved by this Association, formally requested inspection by this committee with the view of again making application for reinstatement to the list of approved colleges. In March the St. Joseph Veterinary College was visited by three members of this committee, Drs. L. W. Goss, J. S. Koen, and J. Fleming. The detailed report of this subcommittee is on file and available for examination. The findings of the committee indicate that the St. Joseph Veterinary College is not meeting the A. V. M. A. educational requirements and therefore should not be included in the list of veterinary colleges approved by this Association.

Relative to student attendance in veterinary colleges the following compilation shows a total of 731 students matriculated for the session 1921-22, in the fifteen veterinary colleges accredited by this Association. In addition there were approximately 100 students attending colleges not accredited, or a total of 831 attending veterinary colleges in the United States and Canada. Of the 731 attending the high-standard institutions, 171 were freshmen. The total of freshmen shows a slight decrease from last year's total of 187. Excluding the two Canadian schools, both of which had a decrease in freshmen the past session, the total of freshmen veterinary students in the schools of the United States, session 1921-22, was slightly larger than that of session 1920-21.

The close of the 1921-22 session marked the graduation of such few students as remained in certain of the accredited veterinary colleges, who were transferred from the various private schools upon their discontinuing at the close of the 1919-20 session, the majority of which students lacked four-year-high-school credentials, their acceptance being based upon the special ruling of the A. V. M. A., at the New Orleans meeting in 1919. The beginning of the

STUDENT ATTENDANCE AT APPROVED VETERINARY COLLEGES
SESSION 1921-22

	1st Year	2nd Year	3rd Year	4th Year	Special	Total
Alabama Polytechnic Institute	10	5	14	12	..	41
Colorado Agricultural College	23	13	19	16	1	72
Georgia State Agricultural College	4	4	5	2	..	15
Indiana Veterinary College	9	13	21	30	..	73
Iowa State College	26	17	18	19	6	86
Kansas State Agricultural College	13	14	23	10	3	63
Michigan Agricultural College	11	5	7	6	1	30
Universite de Montreal	8	8	2	4	..	22
New York State Veterinary College (Cornell)	14	17	27	17	5	80
New York State Veterinary College (N. Y. U.)	4	0	2	5	..	11
Ohio State University	14	13	24	35	..	86
Ontario Veterinary College	12	22	35	18	..	87
University of Pennsylvania	11	5	8	7	..	31
Texas Agricultural & Mechanical College	5	1	2	4	..	12
State Collefie of Washington	7	2	7	6	..	22
	171	139	214	191	16	731

1922-23 session will mark an epoch in the development of veterinary education in that the students of each class, freshmen, sophomore, junior and senior, in the approved veterinary colleges of North America will have matriculated on the basis of four years of preliminary high school work, or equivalent studies properly approved. No one can longer make a critical point that veterinary students are matriculated on a lower preliminary educational basis than students of engineering, science, law, the arts, agriculture, dentistry or pharmacy. We are finally on an equivalent basis with all except human medicine, which has advanced entrance requirements still further, the requirements being two to four years of collegiate work preceding the medical work proper.

In connection with the decreased attendance in veterinary colleges due to the increase in entrance requirements and length of curriculum, your committee has during the year given some attention to the matter of a possible shortage of veterinarians in the near future, a matter which has received considerable emphasis from certain sources. We have failed to discover any apparent total shortage of veterinarians in those sections of the country where there would be a possibility of a veterinarian prospering. There are communities where there is apparently a surplus of veterinary service, and others where proper veterinary service is lacking. In some cases there is a crowding to certain districts, leaving other districts somewhat depleted. What seems to be necessary at present, rather than a great increase in number of veterinary graduates, is a more equitable distribution of those graduating and those already in the field, the same problem that the medical profession is attempting to solve.

There are many in the profession who feel that in view of the rapid evolution of veterinary practice the past few years, that it is fortunate that the output from veterinary colleges has been materially decreased, and that when the profession adjusts itself on the new basis that the law of supply and demand will prevail. As Dean White, of Ohio, has said, "If in the next few years the number entering the veterinary profession is too small to meet the demand, the public will recognize the fact and we will again find our veterinary institutions filled." Your committee is convinced that what the veterinary profession needs in the next few years is not so much a great increase in numbers of veterinary institutions and students, but rather a continued improvement in the existing educational institutions, with a gradual increase in numbers of students in keeping with demand for services, and a continued improvement in the

educational qualifications of the students graduated. It would seem that all these are forthcoming in view of the steady improvement noted in educational institutions the past few years, as indicated by increased appropriations and facilities for educational and research work, and from reports this year from the deans of various institutions denoting increased interest in veterinary education on the part of prospective students, which means increased enrollments.

There is at the present time a tendency for some laymen associated with various agricultural organizations to infringe upon certain fields of veterinary practice. Their short-sighted and misguided efforts are in many cases due to ignorance of the complexity of many of the problems of disease control, and again largely a matter of promoting their own interests. The actual effect upon the live stock industry is ignored. Such methods cannot do other than complicate problems of disease control, with resultant injury to the live-stock industry as well as the veterinary profession.

Ultimately problems of disease control must be met and solved by the veterinary profession, and without question the services of the competent practitioner in the field will be better appreciated. Meanwhile we are in the hey-day of loose advice and propoganda by special interests in connection with animal diseases. To counteract this the veterinary profession is somewhat handicapped. Due to certain standards of professional ethics, lack of highly-financed, publicity bureaus, special agents, etc., it often looks as though the profession was doing nothing in its own behalf. It would seem as though some method might be evolved through our various local, state, and national veterinary organizations, whereby the educational requirements, scope of work, and attainments of the veterinary profession might be better brought before the public and better appreciated.

Our educational requirements cannot longer be criticized. Our educational institutions compare favorably with those of the other learned professions. Our scholastic attainments and attainments in research are recognized in the scientific world. However, our profession is young and in many places not understood. Better recognition of the profession by the live-stock interests and society is to be desired. Must it be by a slow process that this recognition be secured, or is there not some method whereby ethical publicity relative to the attainments of the veterinary profession may be brought before the public? This is a matter which needs the careful attention of state and national veterinary organizations.

Summary

This committee, as a result of careful study and analysis of matters pertaining to veterinary education the past year, is able to briefly summarize its findings as follows:

(a). A continued improvement noted in the majority of institutions in teaching facilities and methods, with particular reference to improvement in laboratory and clinical facilities and a tendency toward adoption of teaching methods generally regarded by medical educators as most efficient.

(b). No decreases in appropriations due to decreased number of students, but rather increased appropriations in a number of veterinary colleges.

(c). Increased attention being given to research work in conjunction with teaching work in many institutions, a point of vital importance to the veterinary profession.

(d). A necessity for still further readjustment in veterinary college curricula in some cases, to accommodate the changes in veterinary field conditions.

(e). A necessity for a gradual increase in numbers of veterinarians graduated, trained to meet the changed problems of veterinary practice.

(f). A need for increased publicity for the benefit of the practitioner in the field, emphasizing his qualifications, capabilities, and responsibilities, to counteract the publicity of lay agencies in connection with veterinary activities.

Recommendations

1. This committee recommends the following veterinary colleges as approved colleges for the ensuing year:
Alabama Polytechnic Institute, College of Veterinary Medicine.
Colorado State College, Division of Veterinary Medicine.

Georgia State College of Agriculture, Division of Veterinary Medicine.
Indiana Veterinary College.
Iowa State College, Division of Veterinary Medicine.
Kansas State Agricultural College, Division of Veterinary Medicine.
L'Ecole de Medecine Veterinaire, Universite de Montreal.
Michigan Agricultural College, Division of Veterinary Medicine.
New York State Veterinary College, at Cornell University.
Ohio State University, College of Veterinary Medicine.
Ontario Veterinary College, Toronto University.
State College of Washington, College of Veterinary Science.
Texas Agricultural and Mechanical College, School of Veterinary Medicine.
University of Pennsylvania, School of Veterinary Medicine.

2. This committee recommends that the Dean of each approved veterinary college, through a representative faculty committee, take up a careful consideration of the curricula content and arrangement of his particular institution, as compared with the curricula of the other approved colleges, with the view to attempting improvement and such degree of uniformity as may seem advisable, through a meeting of the deans or their representatives with the Committee on Intelligence and Education.

3. This committee recommends that the appropriation of $1000.00 available the past two years for the work of this committee be continued for the ensuing year.

H. D. BERGMAN, *Chairman*
(term expires 1923)
J. FLEMING
(term expires 1926)
L. W. GOSS
(term expires 1925)
J. S. KOEN
(term expires 1922)
B. T. SIMMS
(term expires 1924)
Committee on Intelligence and Education.

DR. V. A. MOORE: I move the adoption of the report.

. . . The motion was seconded . . .

PRESIDENT KINSLEY: You have heard the motion. Is there any discussion?

SECRETARY MAYO: Mr. President, I would like to ask if the Ontario Veterinary College is now affiliated with the Toronto University or the Agricultural College.

DR. TORRANCE: With the University.

DR. E. E. WEGNER (Pullman, Wash.): I didn't quite understand the second recommendation.

DR. BERGMAN: I will read it again. (Re-read the second recommendation.)

I might say in connection with this recommendation, when the Committee on Intelligence and Education, some three or four years ago, outlined a sort of progressive program looking toward the improvement of veterinary educational conditions, we felt that this program would probably run over a period of five or six years. We have made some progress, as the majority of you know. Now at that time we had in mind a careful study of veterinary curricula, because we find in the various institu-

tions a great diversity, not only in subject matter but the time requirements in connection with different subjects, sequence of subjects, etc., which makes it almost impossible, at the present time, for a student to transfer from one accredited veterinary college to another.

The American Medical Association made a study of this problem some years ago, and even went so far as to attempt to outline what they called a suggestive curriculum for medical schools. Just how closely they are sticking to the so-called suggestive curriculum, I don't know, or how far we may be able to get in connection with this prospective plan.

Dr. Moore, in a paper presented in one of the sections, emphasized the need for this very thing. If we don't get any further in conjunction with the representatives of the various institutions, than to work out some apparently logical sequence in connection with such, and possibly call the same subject matter as taught in the various institutions by the same name, we are going to make progress.

There is a demand at the present time, on the part of students, to transfer from one accredited institution to another, and they may want to specialize along some line, and that thing should be encouraged, if they desire to do it. That is the idea in this recommendation of the Committee.

Now it is the idea of the Committee to notify each Dean definitely relative to this recommendation and attempt to get this meeting probably at the time of the Sanitary Association meeting in Chicago, by which time the Deans will have had ample time to consider this thing and we will try and get together to see if any progress can be made.

PRESIDENT KINSLEY: Any further remarks or questions?

The motion to adopt the report was carried.

PRESIDENT KINSLEY: We have now two splendid selections on the literary program. The next number is "The Veterinary Profession as Observed in Various European Countries," by Dr. A. Eichhorn, of Pearl River, N. Y. Dr. Eichhorn needs no introduction; you all know him. (Applause) Dr. Eichhorn then delivered his address. (Published in the JOURNAL, January, 1923.)

Gentlemen, I only wish we had the time to discuss Dr. Eichhorn's report, but owing to the fact that our next speaker, and the one whom we have reserved for the last of the literary pro-

gram, leaves on a train within an hour. I feel it necessary to call upon Dr. John R. Mohler. (Applause)

Dr. Mohler presented his address on "Present Problems of Our Animal Industry." (Applause) (Published in the JOURNAL, February, 1923.)

PRESIDENT KINSLEY: Gentlemen, I know I speak the sentiment of all the members when I say that we appreciate very much the remarks of Dr. Mohler.

Is there any unfinished business to come before the meeting? Any new business?

DR. STANGE: Mr. President and Gentlemen: At the next annual meeting we shall ask for the adoption of the following amendments to the Constitution:

Article 3, Section 1, to read, "Members of this Association shall be of three kinds—active, honorary and junior.

"Notice is also given asking an amendment to the By-laws of all articles relating to the election of junior members; also an amendment to Article 5, regulating the initiation fee and dues of junior members."

C. H. Stange
M. Jacob
D. M. Campbell.

Gentlemen, in explanation I want to say that it is the opinion of some of us that by arranging a possible connection between veterinary students in colleges and this Association, by making them not *active* but *junior* members, and keeping them in touch with the activities and the possibilities of the Association work, that we can save much time and increase our membership by graduating the students into the Association instead of allowing them to locate and then spending a lot of money trying to get them in. We believe that it is a move in the right direction.

Mr. Chairman, I move that this be referred to the Executive Board to be considered at the next annual meeting.

. . . The motion was seconded and carried . . .

PRESIDENT KINSLEY: Any further new business?

SECRETARY MAYO: Mr. President and Members of the Association: I want to take this opportunity of thanking every individual member who has given me such cordial support. In the six years that I have occupied the Secretary's office, only two members have taken the opportunity of writing me critical letters. To one I furnished evidence and convinced him that he was wrong and he wrote a nice letter in reply. The other is of

such peculiar mentality that I didn't place much importance on his conclusions. I have made mistakes, I know, but I have tried to be square. I thank you. (Applause)

DR. TORRANCE: Mr. President, I know the members of this Association are always pleased to hear of honors or distinctions conferred by foreign countries upon members of this Association. During the past year two of our Canadian members have been so honored. Dr. J. G. Rutherford has been elected a corresponding member of the Société Centrale Vétérinaire de Médecine of Paris; and Dr. F. T. Daubigny, the Dean of the Veterinary College of Montreal, has had conferred upon him the title of Officier de l'ordre de Merite Agricole, of France. I feel sure that this distinction conferred upon two of our members might well be recognized by a resolution, and I beg to move that this Association has heard with pleasure of the distinction conferred upon two of our members, namely, Dr. J. G. Rutherford and Dr. F. T. Daubigny, from France.

PRESIDENT KINSLEY: Gentlemen, you have heard the motion and the worthy object is very evident. Is there a second?

. . . The motion was seconded and a rising vote was given . . .

PRESIDENT KINSLEY: Just before installing the incoming officers, I wish to thank all of the officers who have so finely cooperated with the Executive Board of this Association. I wish to thank personally each one who has taken part in the program of this convention, and I wish to thank personally each member for his kind attention and particularly for the large number who still remain at the close of the convention.

Next in order will be the installation of the new President-elect, and I will ask Dr. H. B. Treman, of Iowa, and Dr. T. J. Foster, of Illinois, to escort the President-elect Dr. Welch, to the platform.

. . . Dr. Treman and Dr. Foster escorted Dr. Welch to the platform . . . (Applause)

PRESIDENT KINSLEY: Gentlemen, your new President needs no introduction. It has been a custom for many years for the outgoing President to present to the incoming President this gavel. This gavel was presented to this Association twenty years ago at the convention in Minneapolis. Dr. Welch, I present this gavel to you as the emblem of the American Veterinary Medical Association. I hope you will have as much pleasure

in the conduct of your office as I have had during my stay therein. (Applause)

I think the new President should give us just a few remarks now.

PRESIDENT-ELECT WELCH: Fellow-members, I think that I shall not take up a great deal of your time. I think perhaps you are mostly all in the same shape I am—you would like to get out of here and catch a train as quickly as possible.

However, I am certain from the many sentiments that have been expressed to me since my election that I shall have the hearty cooperation of the majority of the Association, and that is what we need in this Association—close cooperation, that is what spells success.

As Kipling so beautifully put it,

"It is not the individual
Nor the army as a whole,
But the everlasting team-work
Of every bloomin' soul."

Our Association, in the coming year, will be a success if you members make it such. It so often happens that when you have elected your officers you step aside and leave most of the work upon their shoulders, thinking that your duty has been performed. Not so. If this Association is a success during the ensuing year, it will be through your endeavors as much as through the officers'. Gentlemen, I thank you. (Applause)

PRESIDENT KINSLEY: Of the Vice-Presidents elected, I see only Dr. Hart. Will Dr. Turner and Dr. Goss conduct Dr. Hart to the rostrum?

. . . . Dr. Hart was escorted to the platform . . .

PRESIDENT KINSLEY: Gentlemen, you are perfectly acquainted with your Vice-President, Dr. Hart. I presume he has some remarks.

DR. HART: I wish to thank you very much, gentlemen, for the honor you have conferred upon me in electing me to this position. I feel somewhat, in carrying out the duties of this position, like the man who was acting as assistant to one of the shipyard workers during the war, in the shipyard in which they were working on the cost-plus basis. This man went to the shipyard and received employment, and when turned over to the foreman he was given a hammer and told to walk around through the various parts of the plant and see what was going

on, and that was all he needed to do. He did that for several days, when he came upon the man who gave him the employment. The man asked, "How are you getting along?"

"Very satisfactorily, except there is another man following me around doing the same thing I seem to be doing, and he seems to be keeping very close tab on me."

The foreman said, "Don't worry about the man, he is your assistant." Now I expect to make a good assistant in that way to the Third Vice-President.

I thank you very kindly. (Applause)

PRESIDENT KINSLEY: Dr. Marsteller, will you conduct Dr. Hoskins to the platform, please?

. . . Dr. Marsteller conducted Dr. Hoskins to the platform . . . (Applause)

PRESIDENT KINSLEY: Your new Secretary and combination officer—soon.

DR. HOSKINS: Gentlemen, you heard this Ford snort around last night, and I am not going to delay you with another address at this time. Dr. Mayo said he made mistakes, and I expect to make mistakes. It is frequently said that the person who makes no mistakes never accomplishes anything.

I am fully aware of the fact that I have a big job on my hands, and I want to thank the men who have come up to me and wished me well and told me that they were in back of me and wanted to know if there was anything they could do. I will enter upon my new duties with the thought that I have the unanimous backing of every single member of the Association.

I thank you. (Applause)

PRESIDENT KINSLEY: Is Dr. Jacob in the room? His election has been a chronic affair and I presume we can pass over it.

Gentlemen, if there is nothing further the convention will stand adjourned.

. . . The meeting adjourned at twelve o'clock . . .

ADJOURNMENT

(*To be continued.*)

DR. TOBIAS TO SIOUX CITY

Dr. D. D. Tobias (Chi. '10), formerly State Veterinarian of Nebraska, resigned his position March 1st. He is now connected with the Sioux City Serum Company, in the capacity of sales and field work.

ORGANIZATION OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION
1922-1923

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OTHER MEETINGS

NATIONAL ASSOCIATION OF B. A. I. VETERINARIANS
Metropolitan Division

A meeting of the Metropolitan Division of the National Association of the Bureau of Animal Indsutry Veterinarians, was held at the Academy of Medicine, New York City, on Friday evening, January 26, 1923.

Through the courtesy of Dr. John R. Mohler, Chief of the Bureau of Animal Industry, Dr. B. H. Ransom, Chief of the Zoological Division, was present and delivered an address, illustrated with lantern slides, on "Parasites with Particular Reference to Meat Inspection."

The Academy of Medicine hall had been selected for this occasion on account of its ample capacity. Practically the entire membership of the Division was present, in addition to members of the New York County and the New Jersey State Veterinary Medical Associations, invited as guests.

The address was very interesting and instructive and much appreciated. At its conclusion Dr. Ransom kindly answered the questions put to him by the various members. These questions related particularly to post-mortem work and to specimens which had been brought to the meeting for demonstration.

In behalf of the members of the division and their guests, Dr. Albert Long, President of the Division, extended to Dr. Ransom the thanks of the members for his able and instructive talk.

E. L. SANDER, *Secretary-Treasurer.*

PHILIPPINE VETERINARY MEDICAL ASSOCIATION

The eleventh annual meeting of the Philippine Veterinary Medical Association was held in Rizal Hall, University of the Philippines, Manila, P. I., on February 12 and 13, 1923.

The first session of the meeting was called to order at 9:15 a. m., by the President, Dr. Harry F. Kern. Upon motion duly seconded the minutes of the last meeting were unanimously approved, as published in the veterinary number of the Philippine Agricultural Review, in 1922. Dr. Cipriano San Diego, a graduate of the College of Veterinary Science, class of 1922, was admitted to membership.

The financial condition of the Association was reported by the Secretary-Treasurer, as passed by the Committee on Finance. Upon motion duly seconded this report was unanimously approved.

The Secretary then read the following resolution in memory of our late member Dr. James B. Ashcraft, which was approved:

WHEREAS, Dr. JAMES B. ASHCRAFT, was elected to membership in the Philippine Veterinary Medical Association, February 4, 1921; and

WHEREAS, he was an active and inspiring promoter in the progress of this Association; and

WHEREAS, God in his great wisdom, willed it that we be deprived of his warm firendship and valuable assistance in the progress of veterinary medicine in the Philippine Islands; be it, therefore,

RESOLVED by the Philippine Veterinary Medical Association, as it is hereby resolved in this 14th day of our Lord, to unanimously convey our sympathy to the family of the deceased for this irreparable loss; and, be it further

RESOLVED, that copies of this resolution be spread in the minutes of the Association, and sent for publication to one local paper and to the JOURNAL OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION.

The attention of the Association was called by the Secretary to an advertisement in the December 1922 issue of "The Veterinary Journal," edited by Dr. Frederick Hobday, in London, England, with reference to a veterinary correspondence college offering degrees in M. R. C. V. S., B. Sc., B. V. Sc., D. V. H., F. R. C. V. S., M. V. Sc., and D. Sc. Dr. Manresa moved that the Secretary be instructed to write a letter to the Secretary of the A. V. M. A., inviting his attention to this flagrant announcement, published in a supposedly scientific magazine.

The annual address of the President was rife with instructive and inspiring thoughts. He concisely reviewed the different fields of activity and the future possibilities of service of the veterinary profession in the Philippines.

Dr. Gomez moved that the President appoint a committee of three to convey to the Legislature the indorsement of the Association for the early approval of the Castration Bill. Dr. Gison seconded. Motion carried. The President appointed the following: Dr. San Agustin, Chairman; Dr. Lecaros, and Dr. Schultz.

There being no further business, the meeting adjourned at 12:30 p.m. to meet the following day.

The second session of the meeting was called to order by the President at 9:20 a. m. the following day. The first speaker was Dr. S. Youngberg, Chief Veterinarian. His topic was "The Present Status of the Veterinary Profession." He recited his impressions obtained from his recent trip to the United States, having met such prominent men in the veterinary profession as Dr. W. H. Welch, President of the A. V. M. A., Dr. A. T. Kinsley, Dr. L. A. Merrilat and others. He briefly reviewed the development of the different professions, saying that the veterinarian is the youngest of all his co-professionals. His services are required on a strictly economic basis.

At the present time, Dr. Youngberg continued, the veterinary profession is passing through a transition stage due to the financial crisis. To a large extent locomotive power is replacing horse power in the larger cities of the East and as a consequence a great number of practitioners, who have been for years devoting their attention to horse practice, have lost all anchor, as it were, in the sea of their activities. However, the dairy industry is being developed rapidly in the cities.

In the agricultural sections of the West, the swine and cattle industries are at the height of their development. From authentic sources however, Dr. Youngberg reported that it is the general opinion that the veterinary profession in the United States is actually crowded. He claimed that in the Philippines the field of activity of the veterinary profession is as yet limited, and consequently it will necessitate a great deal of pioneering work in this line. He suggests that we should work for the creation of provincial veterinarians, to be paid by the province employing them, as due to the low financial condition of the government, insular positions are not easily provided for.

Dr. San Agustin moved that a committee of three be appointed by the President, with the Chief Veterinarian as Chairman, to investigate and report to the Association the possible avenues of opportunities for the veterinary profession in the Philippines. The motion was carried and the President appointed the follow: ing: Dr. Youngberg, Chairman; Dr. San Agustin and Dr. Gison.

The next speaker was Dr. Gearhart, owner of a large dairy farm. He spoke on "Indian Cattle and Buffaloes as Dairy Animals." It was a good defense for these animals, as being

the ideal ones for a dairy farm in the Philippines. The advantages in their favor are the following: (1) They are hardy and can stand the storms and wind in the pasture. (2) They can feed on rough and coarse feed. (3) The offspring find a good and ready market. (4) They are resistant to diseases, especially to rinderpest and tuberculosis.

The meeting adjourned at 12:30 p.m. and reconvened at 2:25 p. m., the President again calling the meeting to order.

In place of Dr. Alano, who was absent, Dr. Kern briefly summarized the important parts of his topic, as he is acquainted with the epidemic of anthrax in Laguna province.

After the discussions the election of officers was held. Dr. Manresa moved to re-elect the officers *in toto*. Dr. Lacaros seconded. Motion was carried unanimously. The meeting adjourned at 3:30 p. m.

A. K. GOMEZ, *Secretary-Treasurer.*

IDAHO VETERINARY MEDICAL ASSOCIATION

The third annual meeting of the Idaho Veterinary Medical Association was held at Boise, Idaho, February 18, 1923, with a total attendance of thirty-five. The morning session was opened with a few remarks of greeting from the President, Dr. Ray B. Hurd, introducing the Hon. E. B. Sherman, Mayor of Boise, who gave a very cordial address of welcome, which was responded to by Dr. W. C. Nye, of Rigby, Idaho.

Dr. Charles F. Ensign, of the Public Health Service, Boise Barracks, gave a very interesting lecture on some of the problems of tuberculosis control, detailing especially the difficulties met by the medical profession, in trying to control the spread of this disease, with significant reference to the progress made in recent years in establishing certain facts concerning the transmissibility from domestic animals to the human; commending very highly the Idaho Veterinary Medical Association in its splendid cooperation with the State and Federal Bureaus and all Public Service organizations, especially the tuberculosis eradication work; recognizing the many problems the medical and veterinary professions have in common, relative to the control and eradication of the many diseases transmissible from animals to man, and vice versa.

In his lecture on "Veterinary Medicine, as Influenced by Recent Discoveries," Dr. Otto Menig, of the Washington State College, brought out many interesting things which will give the

profession much food for thought. Dr. Menig is strictly a Western veterinarian, and through actual practice and his connection with the Washington State College, as Professor of Veterinary Medicine, has become thoroughly familiar with Western live stock conditions relative to live stock diseases and their control and is considered an authority on these matters.

Dr. Menig discussed at length the important scientific discoveries that have practical bearings upon veterinary practice, centering his remarks on the relationship of life to its environments, and the importance of the therapeutist recognizing this factor and meeting the conditions of environment, for the purpose of preserving and maintaining the animal's vitality and resistance to disease and conditions adverse to health and normality.

Prof. E. F. Rinhart, of the University Extension Bureau, addressed the meeting on the subject of "Animal Husbandry Problems." Prof. Rinhart is a thorough student of animal husbandry, with many years of experience in both East and West, and presented these problems to the veterinarians in a very practical and masterly way. He is in closer touch with the live stock people of the State, perhaps, than any one other individual employed in the various Public Service organizations. Likewise he is in very close touch with the veterinary profession, recognizing that veterinary practice and animal husbandry are in very close relation to each other. Mr. Rinhart is well known to the veterinarians of Idaho and is held in high esteem by them.

The minutes and Secretary's report of the last annual meeting were read and approved. The report of the Executive Board on the election, by ballot, of the officers was read and approved, announcing the election of the following officers for the ensuing two years: President, Dr. Ray B. Hurd, Payette; Vice-President, Dr. J. E. McCoy, Twin Falls; Secretary-Treasurer, Dr. J. D. Adams, Boise; Executive Board (for a term of two years), Dr. W. R. Kidwell.

The afternoon session was opened by the President with his annual address. In his usual jovial manner, Dr. Hurd very ably portrayed the inception, development and progress of the present Association, and the high standard which the profession has attained, impressing on the minds of the members the necessity of lending every aid and support to the organization.

Then followed each number, as scheduled on the program, followed by discussions. Dr. Chas. Seagraves, of Coeur d'Alene,

reviewed the subject of "Genetics," which was discussed with much interest. Busy practitioners have little time to devote to these subjects and those in attendance took great interest in refreshing their minds on some of the main points in Mendel's theory.

Dr. J. C. Sorensen, of Idaho Falls, gave a splendid paper on "Mastitis." Interesting and instructive discussions followed on the different kinds of mastitis, with special consideration given to the catarrhal form. The subject, "The Duty of a Veterinarian in his Community," was very ably presented by Dr. A. J. Powell, of Lewiston, Idaho, and met with responses of approval from the members present.

Dr. S. E. Nelson, of Preston, Idaho, was not able to be present. His paper, "Veterinary Anesthetics," was read by the Secretary and was discussed with much interest by the members present. Dr. W. C. Nye, of Rigby, Idaho, presented a very fine paper on "Different Types and Breeds of Farm Animals;" pointing out the necessity of the present-day veterinarian being familiar with breeds and breeding, with relation to local conditions of environment and adaptability of different breeds and different crosses to such conditions.

The evening session was given over to the discussion of Dr. McCoy's paper on "Abortion Disease and its Sequelae." There was much interesting and instructive discussion of the different phases of diagnosis, treatment and control of this disease. Committee reports were received and approved and the President announced the appointment of standing committees for the ensuing year.

It was decided that the next annual meeting would be held at Lewiston, Idaho, some time in May or June, 1924, the exact date to be determined later. It was also decided to hold a mid-year meeting, at Idaho Falls, some time in August of this year, at which meeting the program would be principally clinics. A unanimous vote of thanks and appreciation was given to those appearing on the program and an honorary membership in the Association conferred upon Dr. Menig.

There being no further business to come before the House, the meeting adjourned *sine die*.

J. D. ADAMS, *Secretary*.

NORTHWESTERN AND CENTRAL WISCONSIN VETERINARY MEDICAL ASSOCIATION

A joint meeting of the Central and Northwestern Wisconsin Veterinary Medical Associations was held at Marshfield, March 6th, 1923. Owing to the light attendance in the morning the business session was put over until evening, and the clinic was held in its place. The clinic held at the hospital of Dr. A. J. Abbott, was very large and proved to be one of the best held for some time, all the forenoon and afternoon being taken up with it.

As we had the pleasure of having Dr. L. A. Merillat, of Chicago, with us for the day, he was persuaded to do the major part of the operating and as usual he rose to the occasion and met it more than half way. It did some of his former students good to see him again in action and talking at the same time. At 7 p.m. a banquet was held at the Hotel Blodgett, at which about forty members and their wives attended. After the banquet a business meeting was held and under the head of "Good of the Associations," the afternoon and evening programs were taken up.

It was with regret that we learned from Dr. Merillat that Dr. C. A. Zell has been taken suddenly ill and was unable to appear on the program. With other slight exceptions the program was carried out in full. Those taking part included Drs. W. F. Nolechek, of Thorp; J. R. Fessler, of Bruce; S. E. Cottrill, of Wisconsin Rapids, and W. W. Payne, of Colby. At the conclusion of the program, a rising vote of thanks was extended Dr. Merillat for his work in the clinic and the fine talk we had just listened to.

The following officers were elected for the ensuing year: President, Dr. James O'Donnel, Owen; Vice-President, Dr. G. A. Mills, Wausau; Secretary-Treasurer, Dr. W. R. Swan, Stevens Point. All members present expressed themselves as more than pleased with the meeting and regretted only that there were not more present. The next meeting will be held at Stevens Point, in August.

W. R. Swan.

B. A. I. VETERINARY INSPECTORS' ASSOCIATION OF CHICAGO

The following is a report of the meetings held during the past month by the school of instructions for the veterinary inspectors, which meets in the Government Office of one of the local plants each Monday morning. The Chicago Branch of the National

Association of Bureau of Animal Industry Veterinarians prepares a program for several weeks in advance on various subjects relating to meat inspection. Pathological specimens of interest, as well as rare conditions found by the inspectors, are collected during the week and presented to the meeting for diagnosis and discussions.

On March 12, 1923, Dr. J. A. Molengraft, read a paper on "Milk and its relation to Public Health."

On March 19, 1923, Dr. J. S. Bengston, read a paper on "Botulism."

On March 26, 1923, Dr. O. Hornlein, gave a talk on "Discolorations of Organs and Tissues as Related to Meat Inspection.'

On April 2, 1923, Dr. H. B., Raffensperger, gave a talk on "Parasites of Food-Producing Animals."

On April 9, 1923, Dr. W. N. Neil, gave a discussion on "The Work of the Bureau of Animal Industry Outside of the Meat Inspection Division."

L. T. HOPKINS, *Secretary*

MAINE VETERINARY MEDICAL ASSOCIATION

The Maine Veterinary Medical Association met at the Bangor House, Bangor, Maine, April 11, 1923, at 7 p. m.

The Legislative Committee reported the passage of an act regulating the practice of veterinary medicine in Maine, and another act directing the Board of Veterinary Examiners to issue a certificate to a Canadian citizen who refused to write the required examination, on the grounds that he never had studied at any college and was not familiar with the technical terms. More power to the Legislature.

Dr. F. L. Russell, of the University of Maine, spoke regarding the control of abortion disease. He advised the thorough cleaning up of infected herds and taking the losses, rather than half-way measures, and that we as veterinarians should advise vigorous treatment. He did not outline any particular method.

Dr. J. B. Reidy, in charge of Tuberculosis Eradication in the State, made a few remarks in regard to the testing of accredited herds. He advised the accredited veterinarians to charge reasonable fees, in order to encourage the maintenance of accredited herds.

Dr. C. L. Ryan presented a paper on "Eversion of the Uterus

in Cattle." The paper was well written and also thoroughly discussed.

Dr. H. W. Jakeman, of Boston, was the main attraction of the evening. His talk on "Modern Biological Therapy" was well calculated to revise some of our pet theories, upset some of our sure "dope" and cause an increased amount of interest in this interesting field of disease treatment. He said, in part that biologics are abused and misused; active and passive immunity are the basis of all biological therapy; the veterinarian should know the contents of the agents he used, and what they are expected to do. Dr. Jakeman urged the practitioner to keep abreast of the times, but not to be carried away by the over-enthusiasm of commercialism.

The place and program of the next meeting were left to a committee of three.

P. R. Baird, *Secretary.*

SOUTHEASTERN MICHIGAN VETERINARY MEDICAL ASSOCIATION

The regular quarterly meeting of the Southeastern Michigan Veterinary Medical Association was held in Detroit, Michigan, Wednesday, April 18, 1923. The members assembled at the Army and Navy Club at 5:30, where about an hour was spent in visiting. At 6:30 dinner was served to forty-two members and visitors. The business and literary program was held in the new quarters of the Detroit Department of Health, through the courtesy of Dr. H. H. Sparhawk, who had charge of the arrangements.

The meeting was called to order by President Carpenter at 8:00 o'clock. The first speaker to be called upon was Dr. B. J. Killham, State Veterinarian, who reported the status of the several bills of interest to veterinarians pending before the Legislature. He urged the active assistance of all the veterinarians of the State in the efforts to defeat the Farmer Vaccination Bill. Dr. Killham called attention to the fact that the proposed bill was modeled very closely after the Iowa law, and that there was absolutely no call for any such legislation in Michigan.

Dr. J. E. Wurm, of Pigeon, President of the Michigan State Veterinary Medical Association, was the next speaker. Dr. Wurm outlined the activities of the Board of Directors and Legislative Committee of the State Association, in an effort to

defeat the Farmer Vaccination Bill. Dr. Wurm gave some advance information on plans for the summer meeting to be held at East Lansing, the last week in June. It was his desire that the program for this meeting be of such a character that no practitioner could afford to stay away. To this end he asked for volunteers for the program, as well as suggestions of subjects that it would be desirable to have presented. A very vigorous campaign is about to be launched to enlarge the membership of the State Association.

Dr. H. H. Sparhawk, Chief Veterinarian of the Detroit City Board of Health, reported what had been done by the local veterinarians to secure the defeat of the Farmer Vaccination Bill.

Mr. F. V. Hawkins, of Pitman-Moore Company, Indianapolis, was present as a guest and was asked to address the Association on legislative activities in other states. Mr. Hawkins reported his observations on the effects of the law now operative in Iowa, as well as conditions in several other states. Mr. Hawkins dwelt upon the need of greater publicity for the veterinary profession and the value of competent veterinary service for our immense live-stock industry.

The speaker of the evening was Dr. E. W. Porter, Assistant Pathologist, State Serum Institute, Reynoldsburg, Ohio. His topic was "Hog Cholera." Dr. Porter has been engaged in hog cholera work almost exclusively for more than ten years, and he was able to give the veterinarians present some very valuable information and helpful advice in connection with vaccination. With the aid of charts he gave the results of a series of experiments conducted at the Ohio State Serum Institute, with a view to shedding additional light on the several moot questions in connection with hog cholera and the use of serum.

Experiment No. 1 was designed to determine the effect, if any, on the potency of anti-hog cholera serum that had been subjected to freezing.

The results of this experiment indicated that the potency of the serum had not been impaired.

Experiment No. 2 had for its object to determine the part played by the birds in the dissemination of hog cholera virus. In this experiment the symptons of cholera developed in the exposed pigs nine days after visible symptons were exhibited by pigs artificially infected and which were intended to be the

source of the infection to be dissiminated by the fowls used in the experiment.

Experiment No. 3 was conducted to compare the virulence of whole and centrifuged virulent blood, at different intervals after the addition of the preservative, in this case phenol. The result of the experiment was to show that there was no apparent difference in virulence, as late as sixty-eight days after the addition of the preservative.

Experiment No. 4 was conducted with an idea of getting some data on the possibility of producing active immunity by administering serum-alone and following with the virus at different intervals. It would appear from Dr. Porter's work that this is a method which has much promise under certain conditions. It was brought out in this experiment that the passive immunity will persist for approximately five weeks, but is lost in a number of instances by the sixth week.

Experiment No. 5 was designed to throw light on the value of using anti-hog cholera serum as a curative agent. The outcome of this experiment indicated that serum, administered in curative dosage, will save a majority of the hogs treated in the early stages, but cannot be relied upon if treatment is postponed until after the appearance of symptoms.

The discussion on Dr. Porter's paper was opened by Dr. H. M. Newton, in charge of Hog Cholera Control in Michigan. The discussion was entered into by a large number of the veterinarians present; in fact, the subject proved to be so interesting that it was along toward midnight when President Carpenter called the discussion to a close.

The only business transacted was to re-elect all of the officers for another term.

H. PRESTON HOSKINS, *Secretary-Treasurer.*

GOING TO EUROPE

Dr. S. Sisson (Ont. '91) of the Ohio State University, is planning to make a trip to Europe this summer.

Dr. G. E. Jorgenson (McK. '15), of Clermont, Iowa, who has been doing post graduate work at Cornell University during the past year, is planning on a trip to Europe during the coming summer. Mrs. Jorgenson will accompany him. She expects to study music at the Conservatory while Dr. Jorgenson is pursuing his further studies at the University of Copenhagen.

COMMUNICATIONS

THE CHICAGO JOINT MEETING

To the Editor:

At the St. Louis meeting, last August, the Special Committee on Closer Affiliation with State and Provincial Associations, with its report, submitted plans for the revision of the Constitution and By-Laws. It was recommended in this report that provisions be made for the publication of the Constitution and By-Laws, which were attached to the report, so that they could be thoroughly studied by every member of this Association; also that the President appoint a Special Committee, to study the details of the plans submitted, in conjunction with the Executive Board.

The report was adopted in full by the Association, and President Kinsley appointed a Special Committee relative to this revision, as per adoption of the Committee Report.

When the Special Committee met the Executive Board last December, in Chicago, the purpose should have been to consider, jointly, the proposed plans for the revision of the Constitution and By-Laws as recommended in the Special Committee Report submitted and adopted at St. Louis, for the reason that a committee is strictly bound by the instructions received from the assembly, and has no power to modify them.

By ignoring the proposed plans for revision of the Constitution and By-Laws, as submitted at St. Louis, the action of the Joint Committee, in Chicago, became irregular, and in presenting a new set of proposed amendments as substitutes, this Joint Committee usurped authority not vested in a committee appointed to "study the details" of plans already submitted.

The first Special Committee, after much study and consideration, offered a proposition for reorganization in strict compliance with the provisions of the present Constitution and By-Laws. This Committee sensed the general feeling of unrest prevalent among veterinarians. Communications submitted gave evidence that the consensus of opinion is that the national association could and should do much more for its members than has been done in the past.

Leaders in our profession, more than a decade ago, suggested similar plans for reorganization, and I dare say it would have been better for the Association and for the veterinary profession

as a whole, had those plans been adopted. The number of years during which this matter has been under consideration, with no results, is sufficient to indicate that something more is required than making mere proposals and suggested amendments, such as were presented at the Chicago joint meeting.

The definite proposal for reorganization, offered by the first Special Committee, is still waiting to be acted upon by the Committee appointed at St. Louis, and steps will be taken to call another meeting of this Committee before the Association meets at Montreal.

J. H. McLeod,
Chairman Committee on Revision.

Charles City, Iowa, March 19, 1923.

PROPOSED CHANGES OF CONSTITUTION AND BY-LAWS

To the Editor:

It is rather surprising to note some of the proposed changes in the Constitution and By-Laws, as published in the March issue, and to note the absence of any mention of the subject that the distinguished committee was supposed to have been appointed to provide for, that is, the closer affiliation between state and local associations and the A. V. M. A. Last year there was a great appeal for such a change. Now the subject appears as dead as King Tut, without even a tomb to commemorate it.

There are a few facts that every member of the A. V. M. A. should consider. The Constitution and By-Laws should be liberal and should provide the needed latitude for ordinary events. The Association can go forward and do good work. One of the first defects of the plan is the proposition for *six* vice-presidents. We have five now and that is four too many. One vice-president is all that is necessary. The others are purely ornamental, that is, they are supposed to be. Over-officering the Association is a handicap to its progress.

Another proposed change is that the president shall be elected by postal card vote. If the members knew the political combat that goes on in the election of the members of the Executive Board, they would surely kill this new monstrosity. The greatest objection to this plan is that it will operate against the practitioner, *as a man who does not have a national or international*

reputation will stand about as much chance of election as he would for president of the United States.

So far as known no notice in writing has been presented to the Association, as required by our present Constitution and By-Laws, to change the method of electing the president or to provide for more vice-presidents, etc. Until this has been done the recommendations of the committee are purely entertaining.

N. S. MAYO.

Chicago, Ill., March 24, 1923.

TO THE EDITOR:

TWO CORRECTIONS

In reading the proceedings of the A. V. M. A. annual meeting held in St. Louis, Mo., I notice in the April number a few errors by the stenographer in taking down the talk I gave on Ascarids in pigs.

I believe there are two you should correct in the May number. On page 105, second line from the bottom, it should read 39° C instead of 37° C. Also on page 108, fourth line from bottom should read "We can obtain early cleavage in a 70% alcoholic solution and complete development in a 10% dichromate of potassium solution, etc."

I will thank you to make mention of those changes in the May number, as I think they are of scientific importance.

H. B. RAFFENSPERGER.

Chicago, Ill., April 14, 1923.

The Schuylkill Valley (Pa.) Veterinary Medical Association has made a gift of twenty-five dollars to the University of Pennsylvania to be awarded as a prize to the student in the Veterinary School who obtains the highest grade in Milk Hygiene during the present session.

A new law has recently gone into effect, in the State of Pennsylvania, whereby the funds collected for dog taxes will be used to carry on the work of the Bureau of Animal Industry in the Keystone State.

NECROLOGY

DR. JESSE APPLIN DELL

Dr. J. A. Dell, of Los Angeles, Cal., died March 28, 1923, at the age of 65 years. He had not enjoyed good health for some time. Death was attributed to arterio-sclerosis. Dr. Dell was a graduate of the Ontario Veterinary College, class of 1881. Following graduation Dr. Dell located at Ann Arbor, Michigan, and practiced there for a number of years. He was a charter member and first Secretary of the Michigan State Veterinary Medical Association, and at the meeting held about two months ago he was made a life member of the Association.

About twenty years ago Dr. Dell left Ann Arbor to go to California, and located in Los Angeles, where he established a fine practice. He was a member of the California State Veterinary Medical Association, and of the Southern California Veterinary Medical Association. He was President of the latter body at the time of his death, having presided at a meeting only one week previously. Dr. Dell joined the American Veterinary Medical Association in 1910.

The profession of California and the country at large has lost one of its most loyal and unselfish members. Every member of the profession who came in contact with him called him friend. His high ideals of professional ethics and square dealing placed him above the common designation of competitor.

Dr. Dell was of the old school, which did so much to place our profession where it is to day. Competent, courteous, loyal, unselfish, an ornament to his profession, he has set a high standard for younger men to emulate, even under the improved professional conditions that they enjoy today.

Dr. Dell is survived by his widow and two sons.

DR. CHARLES J. WAIDNER

Dr. Charles J. Waidner, of Hellertown, Pennsylvania, died on March 15, 1923, of heart disease, following an illness of three months. Dr. Waidner was a graduate of the New York College of Veterinary Surgeons, and located in Hellertown immediately after his graduation. He was about 62 years of age and is survived by a widow, a daughter, and a son. Dr. Waidner was a member of the Pennsylvania State Veterinary Medical Association.

DR. ONESIMUS G. ATHERTON

Dr. O. G. Atherton died at Fort Wayne, Ind., on April 2, 1923. Dr. Atherton was born at Maysville, Kentucky, April 13, 1846. At the age of sixteen he enlisted in the Union Army and served throughout the war. He conducted a drug store in McLean County, Illinois, from 1874 to 1891, during which period he served as postmaster for one term. Dr. Atherton was a graduate of the Kansas City Veterinary College, class of 1893.

Following graduation Dr. Atherton practiced in Kansas City, Kansas, until November 1896, at which time he entered the service of the Bureau of Animal Industry as Veterinary Inspector. He retired August 1, 1920, under the Retirement Act. His first wife died in 1896 and he remarried in 1912. He is survived by his widow and four children, Dr. I. K. Atherton, Inspector in charge of hog cholera work in Maryland, being the oldest. Dr. Atherton joined the American Veterinary Medical Association in 1909. Interment took place at Bloomington, Illinois.

DR. HARRY TUBBS McNEAL

Dr. Harry T. McNeal died November 8, 1922 at Sunbury, Pa. Death came suddenly and was attributed to heart trouble, as he suffered from this affliction for a number of years. Dr. McNeal was born December 13, 1867 and received his veterinary training at the Ontario Veterinary College, from which institution he graduated with the class of 1895. He practiced in Milton, Pa., for fifteen years, later removing to Sunbury where he practiced for five years.

In 1914 Dr. McNeal accepted a position with the Pennsylvania Bureau of Animal Industry, which position he held at the time of his death. Dr. McNeal joined the American Veterinary Medical Association in 1916. He was also a member of the Pennsylvania State Veterinary Medical Association and the Central Pennsylvania Veterinary Club. He was a member of the F. and A. M. Lodge, of Shickshinny, Pa. Dr. McNeal was a hard and diligent worker and had a host of friends among his colleagues. His loss has been keenly felt by those who knew him best. He is survived by his widow. Interment took place at Shickshinny, Pa., the place of his birth.

DR. DANIEL EMERSON

Dr. Daniel Emerson, of Hollis, New Hampshire, died on January 15, 1923, death being due to cancer of the pancreas. Dr. Emerson was a graduate of the Harvard University Veterinary School, class of 1888. Following graduation Dr. Emerson practiced for a great many years at Lynn, Mass. In 1920 he relinquished active practice and moved to Hollis, New Hampshire, where he took up farming. Dr. Emerson was one of the oldest members of the American Veterinary Medical Association, having been in good standing continuously since his admission to membership in 1888. Following the custom which was in vogue in the Association at that time, he received the title of "Fellow" in 1913, upon the completion of twenty-five years of membership.

DR. EDWARD DANIEL LEACH

Dr. Edward D. Leach, formerly of Fort Wayne, Ind., died on February 16, 1923, after a long illness. Dr. Leach was a graduate of the Chicago Veterinary College, class of 1908, and practiced in Fort Wayne, Ind., up until about two years ago, at which time he was taken sick and was obliged to enter a sanitarium for treatment. Dr. Leach joined the A. V. M. A. in 1913. He is survived by a sister, Miss Sarah A. Leach, 3327 Parkview Ave., Pittsburgh, Pa.

DR. HARRY LOUIS ALDERMAN

Dr. Harry L. Alderman died April 3, 1923, at his home, 132 Massachusetts Avenue, East Lexington, Mass., after an illness of several weeks, due to hardening of the arteries. Dr. Alderman was born in East Lexington, Mass., November 29, 1859. He attended the common schools and later entered Harvard University. His veterinary training was secured in the American Veterinary College, of New York City, from which institution he was graduated in 1883. Since that time he has practiced in Lexington. Dr. Alderman was an inspector of animals in Lexington for many years. He was a member of the Metropolitan Driving Club. He is survived by his widow and a sister.

DR. CLIFFORD GILCHRIST

Dr. Clifford Gilchrist, of Grinnell, Iowa, died on January 12, 1923, as the outcome of an attack of appendicitis. Dr. Gilchrist was a graduate of the Iowa State College, class of 1914, and was in partnership with his older brother, Dr. Willard D. Gilchrist, at Grinnell. Dr. Gilchrist had three and one-half years of service to his credit in the Army, having been discharged with the rank of Captain.

PERSONAL

Lt. Lloyd C. Ewen (U.P. '17) is stationed at Ft. Ethan Allen, Vt.

Dr. A. Sanders Jr. (Chi. '08) has been appointed postmaster at Stephenson, Mich.

Dr. O. J. Osborn has removed from Whittier, Cal., to 1300 N. Lake Ave., Pasadena, Cal.

Dr. C. F. Pauly, (McK. '18), formerly of Canajoharie, N. Y., is now located at Kirkwood, Ill.

Dr. R. H. Mohlenhoff (Chi. '91) of Cleveland, Miss., is planning to attend the meeting at Montreal.

Dr. Wm. A. Giffen (Ont.) of Detroit, Mich., is President-elect of the American Dental Association.

Dr. C. J. Marshall (U.P. '94) addressed the Conestoga Veterinary Club, at Lancaster, Pa., on April 15th.

Dr. J. C. Burneson has left Richmond, Ky., and is now located at 1749 West Pershing Road, Chicago, Ill.

Dr. L. T. Langland (Iowa '22), formerly of Cambridge, Iowa, is now located at 241 Maple St., Waterloo, Iowa.

Dr. A. H. Moody (Ont. '85) of Three Rivers, Mich., has retired from practice. He is nearly 70 years of age.

Dr. E. F. Pile (Kan. '16), of Liberal, Kan., has filed a Government claim at Casper, Wyo., where he is temporarily lovated

Dr. A. G. Griesbach (Cin. '16) has removed from Berthoud, Colo., to Denver. He gives his address as 709 East Eighteenth Ave.

Dr. H. W. Hawley (Chi. '91) has been transferred as Stock Yards Supervisor from Sioux City, Iowa, to Los Angeles, Cal.

Dr. C. M. Grubb (Geo. Wash. '11) of Rockville, Md., is Dairy Inspector for the Health Department of the District of Columbia.

Dr. Joseph Hawkins (Ont. '71), of Detroit, Mich., who has spent the winter at Harbor City, Cal., is expected to return to his home soon.

Dr. Wm. H. Ivens (U.P. '10) of Philadelphia, has become a polo enthusiast and is constructing a large riding academy in the Quaker City.

Dr. Thomas E. Booth (N.Y.-Amer. '06), formerly of Peekskill, N. Y., is now located in New York City. He gives his address as 527 W. 160th St.

Dr. Wm. P. Shuler (Kan. '10), is enrolled as a Federal-Board-for-Vocational-Education student, for advanced work in Poultry Diseases, at the Iowa State College.

Dr. P. C. McLain (K.S.V.C. '18), of Gastonia, N. C., in remitting a check for his dues, writes, "I wouldn't be without the A.V.M.A. JOURNAL for anything."

Dr. Henry S. Weber (McK. '08) is now located in Lancaster, Pa., having recently removed from Weehawken, N. J., He gives his address as 27 East Liberty Street.

Lt. George W. Brower (K.C. '13), of the Officers' Reserve Corps, stationed at the Kansas State Agricultural College, recently underwent an operation for appendicitis.

The condition of Dr. Geo. W. Dunphy (Ont. '80) remains practically the same. Dr. Dunphy has now been confined to his bed almost continuously for nearly two years.

Dr. O. E. Dyson (Chi. '91), of the Packers and Stock Yards Control Bureau of the Department of Agriculture, has been transferred from St. Paul, Minn., to Kansas City, Kan.

Dr. E. T. Hallman (Ala.P.I. '10) of East Lansing, Mich., spent several days during April visiting and inspecting some of the state-owned herds for the Department of Agriculture.

Dr. L. A. Klein (U.P '97), addressed the meeting of the Cumberland Valley Veterinary Club on April 5th, at Waynesboro, Pa., on the subject of "Parenchymatous and Catarrhal Mastitis."

Dr. George Kernohan (Kan. '12) is taking post-graduate work at the Pennsylvania State College, State College, Pa., and is majoring in Bacteriology on a problem in tuberculosis.

Dr. D. A. Piatt (Ont. '91-Chi. '98), of Birmingham, Ala., in remitting his dues, writes as follows, "I find many valuable things in the JOURNAL and do not feel that I can afford to miss a copy of it."

Dr. Norman J. Pyle (U.P. '18) is now connected with the Department of Veterinary Science and Animal Pathology, of the Massachusetts Agricultural College, at Amherst, as Research Professor of Avian Pathology.

Dr. O. C. Anderson (McK. '15) of Detroit, Mich., recently found it desirable to take the Pasteur treatment as a safety-first measure following a bite inflicted by a canine patient which subsequently proved to be rabid.

Dr. J. G. Rutherford (Ont. '79) is now at his farm in the Fraser Valley, in British Columbia, taking a complete rest, which is hoped to put him well on the road to recovery following his severe illness of the past winter.

Dr. W. J. Lentz (U.P. '04) addressed the regular meeting of the Western Pennsylvania Veterinary Club, which was held at Pittsburgh, on April 3rd, on the subject of "Anatomy of Birds and Diseases of Domesticated Fowl."

Dr. S. A. Goldberg (Corn. '14), of the Cornell University Faculty, gave an illustrated lecture before the staff of the Clifton Springs (N.Y.) Sanitorium, on "The Pathology of Deforming Arthritis," during the latter part of March.

Lt.-Col. N. S. Mayo (Chi. '89) and Major D. M. Campbell (K.C.V.C. '07) of Chicago, have been ordered to Headquarters of the Sixth Corps Area, for fifteen days special training, in connection with the Veterinary Officers Reserve Corps.

The friends of Dr. W. H. Ridge (U.P. '88), of Somerton, Pa., will be sorry to hear that he was unfortunate enough to fall and fracture his femur recently. He is resting as well as can be expected at the Hahnemann Hospital, in Philadelphia.

Dr. Guy S. Jones (Iowa '17), has removed from Rockwell City, Iowa, and is now located in Trenton, N. J., in care of the Y. M. C. A. In advising the editor of his change of address Dr. Jones wrote, "I do not wish to miss the JOURNAL."

Dr. E. S. Bacon (K.S.A.C. '20) has left Valley Center, Kan., to enter the Government Service as Veterinary Inspector in the Bureau of Animal Industry. Dr. Bacon has been assigned to Austin, Minn.. He gives his address as 907 W. Oakland.

Dr. Verne A. Scott (K.S.A.C. '18), who is a member of the staff of the John Tarleton Agricultural College, of Stephenville, Tex., in forwarding a check for his dues, writes as follows: "I hope the JOURNAL will continue to be of service to me in the future as it has in the past."

Dr. J. Raymond Wells (U.P. '22) has resigned as Dairy and Meat Inspector for the Department of Public Health, to accept a position with the Angell Memorial Animal Hospital, Boston, Mass. Dr. Wm. H. Haskell, (U.P. '12) has succeeded to the position made vacant by the resignation of Dr. Wells.

Among the veterinarians who have recently been examined at Manhattan, Kan., for commissions in the Veterinary Officers' Reserve Corps are: Drs. N. A. McCosh (Kan. '17), of Randolph, Kan; A. E. Schattenberg (Kan. '19), of Riley, Kan; and H. F. Lienhardt (U.P. '16), of the K.S.A.C. Veterinary Faculty.

Dr. U. G. Houck (U.P. '95) and H. R. Church (Ont. '92) addressed the Northwestern Pennsylvania Veterinary Club, on the subject of tuberculosis, at the regular meeting held in Scranton, Pa., on April 5th. Dr. Houck represented the Federal Bureau of Animal Industry, and Dr. Church represented the Pennsylvania Bureau of Animal Industry.

Capt. A. Eugene Hardy and Lieutenant Robert M. Blatchford (Mich. '22), are the officers of the Veterinary Company of the 107th Medical Regiment, which is now being organized in Detroit, Mich. The entire unit will be mounted, and besides the two commissioned officers in the company, will include five non-commissioned officers and 21 enlisted men.

Dr. Thomas E. LeClaire (Laval '90), of Calgary, Alta., who has been away from his office for the last two years, on account of poor health, has been spending the winter at San Diego, Cal. Dr. LeClaire is expected to return to Calgary about May 1st. He was much improved in health at last report. Dr. LeClaire is planning to attend the meeting in Montreal, which is his native city.

Dean V. A. Moore and Captain R. M. Buffington (Corn. '05), of Ithaca, N. Y., were in Washington during the first week of April, in consultation with Col. J. A. McKinnon, relative to the Veterinary Officers' Reserve Corps and the Veterinary Corps Training Unit. They also were in consultation with Major A. L. Mason (Corn. '05), at Carlisle, Pa., relative to the training camp for veterinary students during the coming summer.